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Fresenius Medical Care is the world's leading provider of dialysis products and services, offering life-sustaining care for people living with chronic kidney failure.

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Theranova

PROVIDE EXPANDED HD(HDx)

- **Theranova***는 기존 HD 혹은 HDF로는 잘 제거되지 않는 **Large middle molecules(25 kDa to < 60 kDa)를 보다 효과적으로 제거**하며, **알부민 손실은 제한적**입니다.[1]
- **β_2-microglobulin 및 kappa, lambda free light chains의 투석 전 수치**가 Theranova 투석기를 사용한 **HDx를 실행하고 3개월과 6개월 후에 감소**하였습니다.
  (41명의 HD 환자를 대상으로 한 다기관 관찰연구 결과)[2**]
- **하지불안증후군 기준이 6개월 후 약 50 % 감소**되었습니다.
  (박스터의 일반 HD 환자를 대상 대규모 관찰연구 결과)[3***]
  더 작은 규모의 전후 비교 연구도 patient-reported symptom burden 결과에는 큰 차이는 없었습니다.[4**]
- **모든 HD 환자에게 적용 가능**합니다.

RETAIN HD SIMPLICITY

- **HD 시설 및 장비를 그대로 사용할 수 있습니다:** HDF 전용 모니터나, 특정 수준 이상의 수질 및 수질 안정성 검사가 필요하지 않습니다.[5]
- HDx는 **HD모드에서 Theranova를 사용하는 것만으로 구현** 가능합니다.

*HDF 또는 HF 모드에서 Theranova 투석기 사용 금지
** 학회 초록에 게재된 데이터를 기반으로 함-자세한 내용은 참고 문헌을 확인하십시오.
*** 학회 초록에 게재된 데이터를 기반으로 함-자세한 내용은 참고 문헌을 확인하십시오.
하지불안증후군(Restless Leg Syndrome)은 여러 개의 2차 유효성 평가 변수 중 하나입니다.

Ref. 1. Kirsch AH, et al. Performance of hemodialysis with novel medium cut-off dialyzers. Nephrol Dial Transpl 2017; 32(1):165-72. **2.** Cantaluppi V, et al. Removal of large-middle molecules on expanded hemodialysis (HDx): a multicentric observational study of 6 months follow-up. ASN 2018 Kidney Week Abstract TH-PO357. **3.** Sanabria M, et al. Quality of life reported by patients with expanded hemodialysis by the Theranova dialyzer in RTS Colombia. ASN 2018 Kidney Week Abstract TH-PO296. **4.** Krishnasamy R, et al. Trial evaluating mid cut-off value membrane clearance of albumin and light chains in hemodialysis patients (REMOVAL-HD): a safety and efficacy study. ASN 2018 Kidney Week Abstract TH-PO353. **5.** Mazairac A, et al. The cost-utility of hemodiafiltration versus hemodialysis in the Convective Transport Study. Nephrol Dial Transplant; 28: 1865-1873.

서울시 종로구 종로1 교보생명빌딩 10층 1001호 Tel: 02. 6262. 7100 Fax: 02. 6272. 7101 www.baxter.co.kr

KOMG2091/19-0001

Jardiance® (empagliflozin)

JardianceDuo® (empagliflozin/ metformin HCl)

Glucose control & CV Event Reduction in type 2 diabetes patients.*

TYPE 2 DM HAS A NEW OPPONENT

- **38%** RRR in CV death[1†]
- superior HbA_{1c} reduction[2-5]

The presence of type 2 diabetes patients* with established CV disease continues to be a significant risk factor for CV death despite the use of evidence-based therapies in anti-diabetic agents.[6‡]

* Adult patients with type 2 diabetes and coronary artery disease, peripheral artery disease, or history of myocardial infarction or stroke.[7]
† CV death decreased, but nonfatal MI, nonfatal stroke, or 4P-MACE showed negative results.
Relative risk of 3P-MACE reduced by 14% versus placebo (Hazard ratio, 0.86 [95.02% CI, 0.74–0.99]; *P*=0.04 for superiority).
3P-MACE (primary outcome): cardiovascular death, nonfatal MI, or nonfatal stroke.
4P-MACE (key secondary outcome): cardiovascular death, nonfatal MI, nonfatal stroke, or hospitalization for unstable angina.
‡ Anti-diabetic agents: RAAS blocker and other anti-hypertensives, statins, and aspirin.

The only oral antidiabetic drug approved for its effect on CV events in patients with type 2 diabetes and established CV disease[7]

3P-MACE, 3-point major adverse cardiovascular events; **4P-MACE**, 4-point major adverse cardiovascular events; **CI**, confidence interval; **CV**, cardiovascular; **DM**, diabetes mellitus; **HbA_{1c}**, glycosylated haemoglobin; **RAAS**, renin-angiotensin-aldosterone system; **RRR**, relative risk reduction.

References **1.** Zinman B, et al. N Engl J Med. 2015;373:2117. **2.** Roden M, et al. Lancet Diabetes Endocrinol. 2013;1:208. **3.** Roden M, et al. Cardiovas Diabetol. 2015;14:154. **4.** Ridderstrale M, et al. Diabetes Obes Metab. 2018;20(12):2768. **5.** Hadjadj S, et al. Diabetes Care. 2016;39(10):1718. **6.** Cavender MA, et al. Circulation. 2015;132:923. **7.** JARDIANCE® product information.

JARDIANCE® (empagliflozin) 10mg, 25mg

[QUALITATIVE AND QUANTITATIVE COMPOSITION] JARDIANCE® (empagliflozin) 1 tablets (257.0mg). Empagliflozin 10mg | JARDIANCE® 25mg (empagliflozin) 1 tablets (206.0mg). Empagliflozin 25mg **[INDICATION AND USAGE]** JARDIANCE® (empagliflozin) tablets are indicated as an adjunct to diet and exercise to improve glycaemic control in adults with type 2 diabetes mellitus. 1. As monotherapy. 2. As add-on therapy; - When the patients never experienced prior treatments and monotherapy would not provide appropriate glycaemic control. - As add-on therapy to metformin in patients with insufficient glycaemic control despite treatment with metformin alone. - As add-on therapy to metformin in combination with pioglitazone or sulphonylurea in patients with insufficient glycaemic control despite treatment with metformin in combination with pioglitazone or sulphonylurea. - As add-on therapy to insulin (alone or in combination with metformin or metformin plus sulphonylurea) in patients with insufficient glycaemic control despite treatment with insulin alone or in combination with metformin or metformin plus sulphonylurea. - As add-on therapy to metformin plus DPP4 inhibitor linagliptin in patients with insufficient glycaemic control despite treatment with metformin plus linagliptin. For effects on cardiovascular events in patients with insufficient glycaemic control with type 2 diabetes mellitus and established cardiovascular disease, see 'Caution in Use, 10. Information for experts 2) Clinical trials'. **[DOSAGE AND ADMINISTRATION]** The recommended dose is 10mg empagliflozin once daily for monotherapy and add-on combination therapy with other glucose lowering medicinal products including insulin. In patients tolerating empagliflozin 10mg once daily who need tighter glycaemic control, the dose can be increased to 25mg once daily. When empagliflozin is used in combination with a sulphonylurea or with insulin, a lower dose of the sulphonylurea or insulin may be considered to reduce the risk of hypoglycaemia. The tablets can be taken with or without food, swallowed whole with water. If a dose is missed, it should be taken as soon as the patient remembers. A double dose should not be taken on the same day. **[CAUTIONS IN USE]** 1. Contraindication. 1) Hypersensitivity to the empagliflozin or any of the excipients. 2) Patients with type 1 diabetes or for the treatment of diabetic ketoacidosis. 3) Patients with an eGFR < 30ml/min/1.73m², or in patients with ESRD or in patients on dialysis. 4) This product contains lactose. Therefore, this product should not be administered to patients with the rare hereditary conditions of galactose intolerance the Lapp lactase deficiency or glucose-galactose malabsoption. **[STORAGE AND HANDLING]** 1) Store in a safe place out of the reach of children. 2) All medication must be stored in its original container with its cap on. Storing the medicine in any container other than the original may cause medicine misuse and even medical deterioration. **[Manufacturer]** Boehringer Ingelheim Pharma GmbH & Co. KG, Germany (Binger Strasse 173, 55216 Ingelheim am Rhein, Germany). **[Imported by]** Boehringer Ingelheim Korea Ltd. 16th Yonsei Foundation Severance Building, 10 Tongil-ro, Jung-gu, Seoul, Korea (04527)

JARDIANCE DUO® (Empagliflozin, Metformin hydrochloride) 5/500mg, 5/850mg, 5/1000mg, 12.5/500mg, 12.5/850mg, 12.5/1000mg

[QUALITATIVE AND QUANTITATIVE COMPOSITION] 5/500mg – Empagliflozin 5mg, Metformin hydrochloride(EP) 500mg, 5/850mg - Empagliflozin 5mg, Metformin hydrochloride(EP) 850mg, 5/1000mg - Empagliflozin 5mg, Metformin hydrochloride(EP) 1000mg, 12.5/500mg – Empagliflozin 12.5mg, Metformin hydrochloride(EP) 500mg, 12.5/850mg – Empagliflozin 12.5mg, Metformin hydrochloride(EP) 850mg, 12.5/1000mg - Empagliflozin 12.5mg, Metformin hydrochloride(EP) 1000mg **[INDICATION AND USAGE]** JARDIANCE DUO is indicated as an adjunct to diet and exercise to improve glycaemic control in adult patients with type 2 diabetes mellitus who are appropriate to take a combination of empagliflozin and metformin. - When the patients never experienced prior treatments and monotherapy would not provide appropriate glycaemic control. - When metformin monotherapy does not provide adequate glycemic control. - As add-on therapy to sulphonylurea in patients with insufficient glycemic control despite treatment with metformin in combination with SU. - As add-on therapy to pioglitazone in patients with insufficient glycemic control despite treatment with metformin in combination with pioglitazone. - As add-on therapy to linagliptin in patients with insufficient glycemic control despite treatment with metformin in combination with linagliptin. - As add-on therapy to insulin in patients with insufficient glycemic control despite treatment with insulin in combination with metformin. - As add-on therapy to insulin in combination with sulphonylurea in patients with insufficient glycemic control despite treatment with insulin in combination with metformin plus sulphonylurea. - As replacement therapy of empagliflozin plus metformin. For effects on cardiovascular events in patients with insufficient glycaemic control with type 2 diabetes mellitus and established cardiovascular disease, see 'Caution in Use, 12. Information for experts 2) Clinical trials'. **[DOSAGE AND ADMINISTRATION]** The recommended dose is one tablet twice daily. The dosage should be individualised on the basis of the patient's current regimen, effectiveness, and tolerability while not exceeding the maximum recommended daily dose of 25mg of empagliflozin and 2000mg of metformin. In patients not adequately controlled on metformin alone or in combination with other products, including insulin, the recommended starting dose of JARDIANCE DUO should provide empagliflozin 5mg twice daily (10mg total daily dose) and the dose of metformin similar to the dose already being taken. In patients tolerating a total daily dose of empagliflozin 10mg and requiring additional glycaemic control, the dose can be increased to a total daily dose of empagliflozin 25mg. Patients switching from separate tablets of empagliflozin (10mg or 25mg total daily dose) and metformin to JARDIANCE DUO should receive the same daily dose of empagliflozin and metformin already being taken. When JARDIANCE DUO is used in combination with a sulphonylurea and/or insulin, a lower dose of sulphonylurea and/or insulin may be required to reduce the risk of hypoglycaemia. JARDIANCE DUO should be given with meals to reduce the gastrointestinal undesirable effects associated with metformin. If a dose is missed, it should be taken as soon as the patient remembers. However, a double dose should not be taken at the same time. In that case, the missed dose should be skipped. **[CAUTIONS IN USE]** 1. Warnings - Metformin hydrochloride 1) Severe lactic acidosis could occur. Fatal cases of lactic acidosis have been reported. 2) Caution is advised, as severe hypoglycaemia could rarely occur when it is used in combination with other glucose-lowering agents such as insulin, sulphonylureas etc. 2. Contraindication 1) Hypersensitivity to active ingredients empagliflozin and/or metformin or to any of the excipients. 2) Moderate (stage 3b) and severe renal failure (CrCl < 45ml/min or eGFR < 45ml/min/1.73m²). 3) Acute conditions with the potential to alter renal function such as: dehydration, severe infection, cardiovascular collapse (shock), acute myocardial infarction, sepsis. 4) Type 1 diabetes, lactic acidosis, acute or chronic metabolic acidosis, including diabetic ketoacidosis with or without coma, history of a ketoacidosis (type 1 diabetes and diabetic ketoacidosis should be treated with insulin). 5) Diabetic pre-coma 6) Congestive heart failure requiring pharmacologic management, in particular those with unstable or acute congestive heart failure. 7) Radiologic studies involving the use of intravascular iodinated contrast materials (for example, intravenous urogram, intravenous cholangiography, angiography, and computed tomography (CT) scans with intravascular contrast materials) - Intravascular administration of iodinated contrast media may lead to acute renal failure and has been associated with lactic acidosis in patients receiving metformin. Therefore, in patients with eGFR > 60ml/min/1.73m², JARDIANCE DUO must be discontinued prior to, or at the time of the test and not be reinstituted until 48 hours afterwards, and only after renal function has been re-evaluated and has not deteriorated further. In patients with moderate renal impairment (eGFR 45-60 ml/min/1.73m²), JARDIANCE DUO must be discontinued 48 hours before administration of iodinated contrast media and not be reinstituted until at least 48 hours afterwards, and only after renal function has been re-evaluated and has not deteriorated further. 8) In patients with severe infections or severe traumatic systemic disorders, JARDIANCE DUO should be temporarily suspended, and should not be restarted until the patient's oral intake has resumed and renal function has been evaluated as normal. 9) JARDIANCE DUO should be temporarily suspended for any surgical procedure (except minor procedures not associated with restricted intake of food and fluids) before 48 hours, and not be reinstituted until 48 hours afterwards, after renal function has been evaluated as normal. 10) Patients with malnutrition, starvation, hyposthenuim pituitary or adrenal insufficiency. 11) Impaired hepatic function (since impaired hepatic function has been associated with some cases of lactic acidosis, JARDIANCE DUO should generally be avoided in patients with clinical or laboratory evidence of hepatic disease), pulmonary infarction, severe respiratory impairment, any condition associated with hypoxemia, excessive alcohol intake, GI disorders such as dehydration, diarrhoea or vomiting. 12) Pregnant women, women who may be pregnant, nursing women. 13) Disease which may cause tissue hypoxia (especially acute disease, or worsening of chronic disease) such as: decompensated heart failure, respiratory failure, recent myocardial infarction, shock **[STORAGE AND HANDLING]** 1) Store in a safe place out of the reach of children. 2) All medication must be stored in its original container with its cap on. Storing the medicine in any container other than the original may cause medicine misuse and even medical deterioration. **[Manufacturer]** Boehringer Ingelheim Pharma GmbH & Co. KG, Germany (Binger Strasse 173, 55216 Ingelheim am Rhein, Germany). **[Imported by]** Boehringer Ingelheim Korea Ltd. 16th Yonsei Foundation Severance Building, 10 Tongil-ro, Jung-gu, Seoul, Korea (04527)

* Please refer to the detailed prescribing information.

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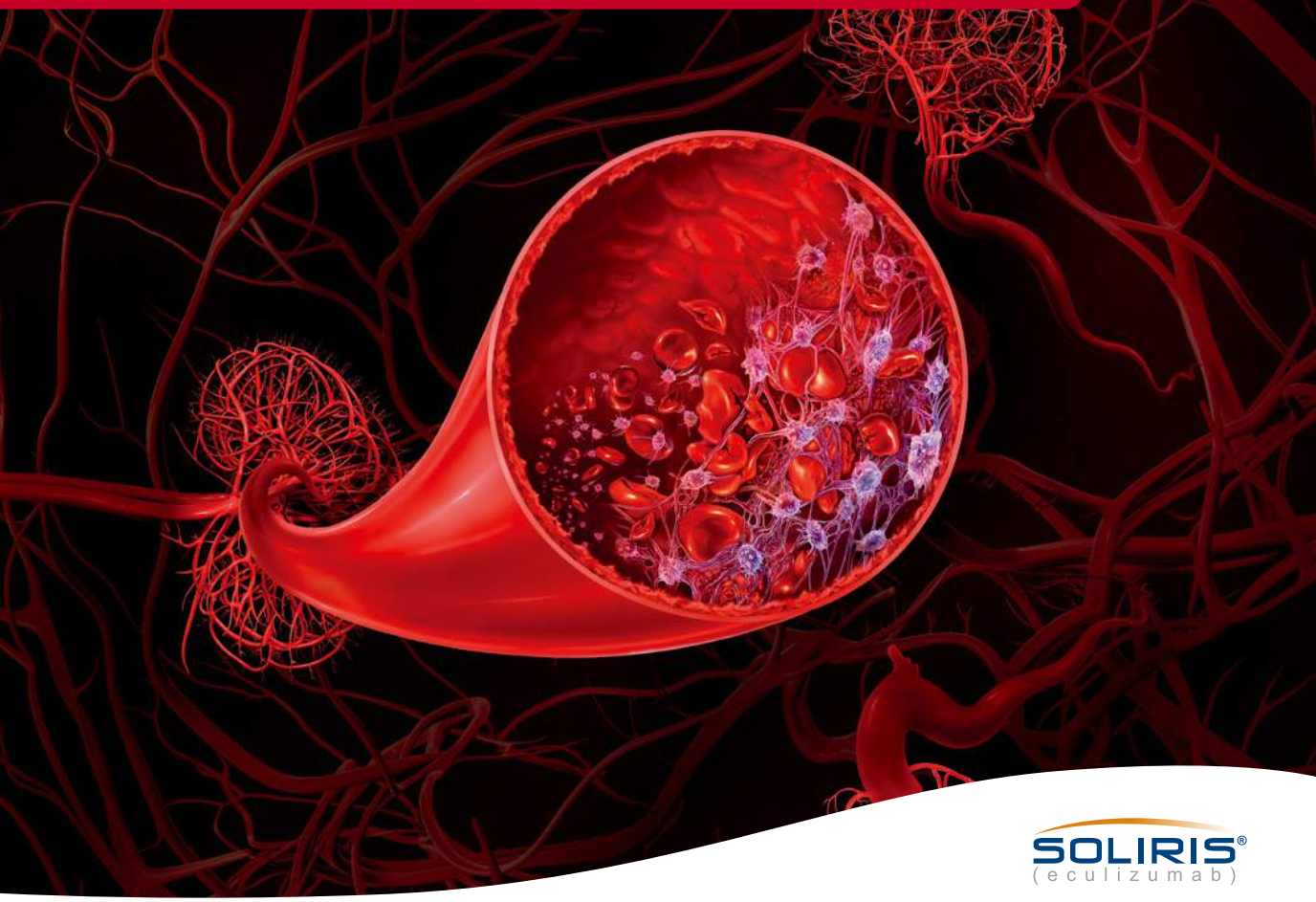
Patients with aHUS can be at continuous risk of the life-threatening consequences of unpredictable complement-mediated TMA[1,2]

Chronic, uncontrolled complement activity in aHUS leads to ongoing endothelial injury, organ damage, and sudden death[2,3]



SOLIRIS®
(eculizumab)

References: 1. Laurence J. Clin Adv Hematol Oncol. 2016;14(suppl 11):1–15. 2. Legendre CM, et al. N Engl J Med. 2013;368:2169–2181. 3. Noris M, et al. Nat Rev Nephrol. 2012;8:622–633.

Selected prescribing information

전문의약품

[제품명] 솔리리스주 **[조성]** 1바이알(30mL)중 에쿨리주맙 300mg **[효능 · 효과] 1) 발작성 야간 혈색소뇨증(PNH : Paroxysmal Nocturnal Hemoglobinuria)** 용혈을 감소시키기 위한 발작성 야간 혈색소뇨증(PNH : Paroxysmal Nocturnal Hemoglobinuria) 환자의 치료. 수혈 이력과 관계없이, 높은 질병 활성을 의미하는 임상 증상이 있는 환자의 용혈에 임상적 이익이 확립되었다. **2) 비정형 용혈성 요독 증후군(aHUS : atypical Hemolytic Uremic Syndrome)** 보체 매개성 혈전성 미세혈관병증을 억제하기 위한 비정형 용혈성 요독 증후군(aHUS : atypical Hemolytic Uremic Syndrome) 환자의 치료 · 사용제한 : 시가(Shiga) 독신 생성 대장균에 의한 용혈성 요독 증후군(STEC-HUS) 환자 대상의 적응을 권장하지 않는다. **3) 전신 중증 근무력증(Generalized Myasthenia Gravis)** 항아세틸콜린 수용체 항체 양성인 환자의 불응성 전신 중증 근무력증(Refractory gMG: Refractory Generalized Myasthenia Gravis)의 치료 **4) 시신경 척수염 범주 질환(Neuromyelitis optica spectrum disorder)** 항아쿠아포린-4(AQP-4) 항체 양성인 환자의 시신경척수염 범주 질환(NMOSD: Neuromyelitis optica spectrum disorder)의 치료 **[용법 · 용량]** 심각한 감염에 대한 위험을 줄이기 위해서 환자들은 최신의 백신 접종 지침(Advisory Committee on Immunization Practices(ACIP) recommendations)에 따라 백신 접종을 해야 한다.(사용상의 주의사항 1. 경고 항 참고) 이 약은 정맥투여되어야 하며 급속정맥투여(IV push) 또는 일시정맥투여(IV bolus)로 투여해서는 안된다. (성인) 1) 발작성 야간 혈색소뇨증(PNH) : 첫 4주간은 매 7일마다 600 mg, 네 번째 용량 투여 7일 후에 다섯 번째 용량으로 900 mg을 투여하고, 그 후부터는 매 14일마다 900 mg을 투여한다. 이 약은 권장 투여량과 일정에 맞게 투여, 혹은 예정된 일정의 2일 전/후로 투여 되어야 한다. 2) 비정형 용혈성 요독 증후군(aHUS) 및 불응성 전신 중증 근무력증(Refractory gMG) 및 시신경 척수염 범주질환(NMOSD) : 첫 4주간은 매 7일마다 900 mg, 네 번째 용량 투여 7일 후에 다섯 번째 용량으로 1200 mg을 투여하고, 그 후부터는 매 14일마다 1200 mg을 투여한다. (소아) 1) 비정형 용혈성 요독증후군(aHUS) 만 18세 미만의 aHUS 환자일 경우, 체중에 따라 일정으로 투여한다. (제품정보 원문 용법 · 용량 [표 1] 만 18세 미만 환자에서의 권장투여법 참고) 이 약은 권장 투여량과 일정에 맞게 투여, 혹은 예정된 일정의 2일 전/후로 투여되어야 한다. (혈장교환요법 및 신선 동결혈장투여시) 성인 및 소아 비정형 요독증후군, 성인 불응성 전신 중증 근무력증 및 시신경 척수염 범주질환 환자에 대해 PE/PI(혈장 교환 요법(plasma exchange 또는 plasmapheresis), 또는 신선 동결 혈장 투여(fresh frozen plasma infusion))와 같은 부수적 시술을 받는 경우 추가 용량 투여가 필요하다. (제품정보 원문 용법 · 용량 [표 2] PE/PI 이후 이 약의 추가적 투여법 참고) **[사용상의 주의사항] 1. 경고** 중대한 수막구균 감염 작용기전으로 인하여 이 약의 사용은 중대한 수막구균 감염(패혈증 그리고/또는 뇌수막염)에 대한 환자의 감수성을 증가시킨다. 이 약의 투여 환자에게서 치명적이고 생명을 위협하는 수막구균 감염이 발생하였다. 수막구균 감염은 어느 혈청군에 의해서도 발생할 수 있지만, 이 약의 투여 환자들은 흔하지 않은 혈청군(X 등)에 의한 질환이 발생할 수 있다. 감염의 위험성을 낮추기 위하여, 이 약의 치료가 지연됨으로 인한 위험성이 수막구균 감염 발생의 위험성보다 큰 경우를 제외하고는 모든 환자들은 반드시 이 약의 투여 시작 최소한 2주 전에 수막구균 백신을 투여 받아야 한다. 만약 접종 받지 않은 환자가 긴급히 이 약의 치료를 받아야 하면, 최대한 빨리 수막구균 백신을 투여 받도록 한다. 수막구균 백신 접종 이후 2주 이내 이 약을 투여할 경우, 4가 수막구균 백신 접종 이후 2주 동안 적절한 예방적 항생요법으로 치료 받아야 한다. 흔한 병원성 수막구균 혈청군을 예방하기 위하여 가능하다면 혈청군 A, C, Y, W135, B에 대한 백신이 권장된다. 환자들은 백신 사용을 위한 최신의 백신 접종 지침(Advisory Committee on Immunization Practices(ACIP) recommendations)에 따라 백신을 접종 혹은 재접종 받아야 한다. 백신 접종은 보체를 더욱 활성화시킬 수 있다. 결과적으로, PNH, aHUS, 불응성 gMG 및 NMOSD를 포함한 보체 매개 질환을 가진 환자들은 용혈(PNH의 경우)이나 혈전성 미세혈관병증(TMA; aHUS의 경우) 또는 중증 근무력증의 악화(불응성 gMG의 경우) 또는 재발(NMOSD의 경우)과 같은 그들의 기저 질환의 징후 및 증상이 증가하는 경험을 할 수 있다. 따라서, 지침에 따른 백신 접종 이후 질환의 증상에 대해 면밀히 관찰되어야 한다. 백신 접종은 수막구균 감염 위험을 줄일 수 있지만, 완전히 없애지는 않는다. 적절한 항생제 사용에 대한 공식 지침(예: 국내 성인 세균성 수막염의 임상진료지침 권고안 등)을 고려하여야 한다. 수막구균 감염의 초기 징후나 증상이 나타나는지 면밀히 관찰하고, 감염이 의심되면 즉시 검사받아야 한다. 환자는 이러한 징후와 증상 및 즉시 치료를 받는 절차에 대해 안내 받아야 하며, 담당 의사는 반드시 환자와 이 약의 치료의 위험과 이익을 상의하여야 한다. 수막구균 감염은 초기에 발견하고 치료하지 않으면 급격히 치명적이고 생명을 위협하게 될 수 있다. 중대한 수막구균 감염을 치료받는 환자는 이 약의 투여를 중지하도록 한다. **2. 다음 환자에는 투여하지 말 것** 1) 이 약의 주성분, 유린 단백질 또는 기타 구성성분에 과민반응이 있는 환자 2) 치료되지 않은 중대한 수막구균(Neisseria meningitidis) 감염 환자 3) 수막구균(Neisseria meningitidis) 백신을 현재 접종하지 않은 환자 또는 백신 접종 이후 2주 동안 적절한 예방적 항생요법으로 치료를 받지 않은 환자(이 약의 치료를 늦추는 것이 수막구균 감염을 일으키는 것보다 중대하지 않은 경우) **3. 다음 환자에는 신중히 투여할 것** 1) 기타 전신 감염: 적용기전으로 인하여 이 약의 치료는 활성 전신 감염이 있는 환자들에게 주의하여 투여하여야 한다. 이 약은 말단 보체 활성을 차단하므로 환자들은 감염, 특히 Neisseria균 및 피낭성 세균(encapsulated bacteria) 감염에 대한 감수성이 증가할 수 있다. 파종성 임균 감염을 포함하는 N. meningitidis 외의 Neisseria 종에 의한 중대한 감염이 보고되었다. 잠재적인 중대한 감염과 그 증상 및 징후에 대한 인식을 높이기 위하여 환자용 정보 안내서의 정보를 환자에게 제공해야 한다. 임질 예방에 관해 환자에게 조언해야 하고 위험성이 있는 환자는 정기적인 검사를 권고한다. 더욱이, 면역력이 약화된 환자와 호중구 감소 환자에서 아스페르길루스 감염이 발생하였다. 이 약을 투여 받는 소아는 폐렴연쇄상구균(Streptococcus pneumonia)과 인플루엔자 간균 B형(Haemophilus influenza type b(Hib))에 의해 중대한 감염을 일으킬 위험이 증가할 수 있다. 폐렴연쇄상구균(Streptococcus pneumonia)과 인플루엔자 간균 B형(Haemophilus influenza type b(Hib))에 의한 감염을 예방하기 위해 최신의 백신 접종 지침에 따라 백신 접종을 받도록 한다. 전신 감염이 있는 환자에게 이 약을 투여할 때는 주의하도록 한다. 애플리주맙에 안정되고 유지 요법을 받는 환자에게 추가적인 백신 접종이 필요한 경우, 이 약 투여에 따른 백신 접종 시기를 신중히 고려해야 한다. 2) 실험실적 검사 결과 모니터링: PNH 환자는 LDH 수치를 확인하여 혈관 내 용혈을 관찰, aHUS 환자는 혈소판 수, 혈청 LDH, 혈청 크레아티닌을 측정하여 미세혈관병증 여부를 관찰하여야 하며, 유지기간 동안 권장 투여일정(14±2일)내에서 용법 · 용량 조정이 필요할 수 있다(매 12일까지). **4. 약물이상반응** 시판 후 보고 및 완료된 임상시험에서 보고된 약물이상반응(발생률 1% 이상 발췌: 매우 흔하게(≥1/10) – 두통, 흔하게(≥1/100 – (1/10) – 폐렴, 상기도감염, 비인두염, 기관지염, 요로 감염, 구강 헤르페스, 백혈구감소증, 빈혈, 불면, 현기증, 미각이상, 고혈압, 기침, 입인두통, 설사, 구토, 구역, 복부통증, 발진, 탈모, 소양증, 관절통, 근육통, 열, 피로감, 인플루엔자 유사질환으로 임상시험에서, 가장 중대한 이상반응은 수막구균 패혈증이었고, 이는 이 약으로 치료받은 환자에서 수막구균 감염증의 흔한 증상이었다. 수막구균 패혈증의 징후와 증상에 대해 환자에게 알리고 즉시 의료 조치 받을 것을 환자에게 권고해야 한다. Neisseria gonorrhoeae, Neisseria sicca / subflava, Neisseria spp unspecified로 인한 패혈증을 포함하여 Neisseria 종의 다른 사례들이 보고되었다. **[제조원]** 알렉시온 **[수입판매원]** (주)한독 **[최종개정일]** 2021-02-18 ***보다 자세한 정보는 제품 설명서를 참조하시기 바랍니다.**

ALEXION

(주)한독 서울시 강남구 테헤란로 132 Tel. 02)527-5114 Fax. 02) 527-5001 www.handok.co.kr

HANDOK

20μg 30μg 40μg 60μg 120μg

NESP®

Darbepoetin alfa

Weekly

Biweekly

Monthly

INDICATIONS

1. Renal anemia
2.Chemotherapy induced anemia in solid cancer patients

DOSAGE AND ADMINISTRATION

<Hemodialysis patients>

-Initial dose

The usual dose of NESP in adult patients is 20 μg, to be administered as a single intravenous injection once weekly.

-Initial dose at the switching from erythropoietin preparations: See Precautions related to Dosage and Administration

-Maintenance dose

When correction of anemia is achieved, the usual dose of NESP in adult patients is 15-60 μg as darbepoetin alfa (genetical recombination), to be administered as a single intravenous injection once weekly. If alleviation of anemia is maintained by once weekly injection, the frequency of administration can be changed to once every two weeks with an initial dose set to be two-fold of the dose in the once weekly injection. In this case, the usual dose in adult patients is 30-120 μg administered as a single intravenous injection once every two weeks. In all cases, the doseshould be adjusted in view of the degree of anemic symptoms and the patient's age, and should not exceed 180 μg as a single injection. The target of anemia correction is around 11 g/dl of hemoglobin level.

<Peritoneal dialysis patients and patients with chronic kidney disease not on dialysis>

-Initial dose

The usual dose of NESP in adult patients is 30μ to be administered as a single injection once every two weeks subcutaneously or intravenously.

-Initial dose at the switching from erythropoietin preparations: See Precautions related to Dosage and Administration

-Maintenance dose

When correction of anemia is achieved, the usual dose of NESP in adult patients is 30-120μg as darbepoetin alfa (genetical recombination), to be administered as a single injection once every two weeks subcutaneously or intravenously. If alleviation of anemia is maintained by once every two weeks injection, the frequency of administration can be changed to once every four weeks with a initial dose set to be two-fold of the dose in the once every two weeks injection. In this case, the usual dose in adult patients is 60-180 μg administered as a single injection once every four weeks subcutaneously or intravenously. In all cases, the dose should be adjusted in view of the degree of anemic symptoms and the patient's age, and should not exceed 180 μg as a single injection. The target of anemia correction is around 11g/dl of hemoglobin level.

<Precautions related to Dosage and Administration>

1. Initial dose at the switching from an erythropoietin preparation.

When NESP is started in substitution for an erythropoietin preparation, the dose and the frequency of administration should be determined on the basis of the dose of the erythropoietin preparation that has been used. See the table (package insert).

1) Patients who have been treated with an erythropoietin preparation twice weekly or three times weekly Calculate the total dose of the erythropoietin preparation administered during the week before the switching, and then determine the initial dose of NESP according to the table below. The treatment should be started on once weekly basis.
2) Patients who have been treated with an erythropoietin preparation once weekly or once every two weeks Calculate the total dose of the erythropoietin preparation administered during the two weeks before the switching, and then determine the initial dose of NESP according to the table below. The treatment should be started on once every two weeks basis.(See the insert paper,

2. Dose adjustment

If dose adjustment is required (for example, when the appropriate increase in the hemoglobin concentration or the hematocrit levels can not be achieved in correction phase, or when the hemoglobin concentration or the hematocrit level deviates from the target range for successive two weeks in maintenance phase), the dose should be increased or decreased according to the table below. Any dose increase should be performed stage by stage in principle.

PRECAUTIONS

See the package insert.

STORAGE

Store in a lightproof container at 2-8 °C and avoid freezing

PACKAGING

1 syringe, 10 syringes
for NESP 20μg, 30μg, 40 μg, 60μg, 120μg, respectively

MANUFACTURED BY :

Taiyo Pharmaceutical Co., Ltd.
1040-22 Matunoki Takayama-shi Gifu, Japan

Kyowa Hakko Kirin Co., Ltd.
100-1 Hagiwara-machi, Takasaki-shi, Gunma, Japan

IMPORTED BY :

KYOWA KIRIN

11F, Asia Tower, 430, Nonhyeon-ro, Gangnam-gu, Seoul, 06223, Rep. of Korea
TEL: 02-3471-4321 FAX: 02-3471-4322
Http://www.kyowa-kirin-korea.com

The Right Key to High Bleeding Risk Patients in HD & CRRT!

HD: hemodialysis, CRRT: continuous renal replacement therapy

FUTHAN is an anticoagulant during extracorporeal blood circulation in patients with bleeding complications or bleeding tendency.[1]

FUTHAN Inj.

- Due to its short half life (5~8 min), its anticoagulant activity is almost limited to extracorporeal circuit.[2,3,4]
- Increase of bleeding risk was not noted in HD patients with bleeding risk.[5,6,7]
- The filter-life is significantly prolonged during CRRT[8,9,10]

Prescribing drug | MFDS Category number: 399

Summary of Prescribing Information[1]

【PRODUCT NAME IN KOREA】• Futhan for Inj. (nafamostat mesilate) • Futhan50 for Inj. (nafamostat mesilate) 【INGREDIENT】• Futhan for Inj. : 1 vial contains 10mg of nafamostat mesilate • Futhan50 for Inj. : 1 vial contains 50mg of nafamostat mesilate 【INDICATION AND USAGE】1. For improvement of acute symptoms of pancreatitis (acute pancreatitis, acute exacerbation of chronic pancreatitis, acute postoperative pancreatitis, ERCP-induced acute pancreatitis, traumatic pancreatitis) – Futhan for Inj. only 2. Disseminated intravascular coagulation (DIC) 3. To prevent coagulation of blood during extracorporeal blood circulation (ex. hemodialysis, plasmapheresis) in patients with bleeding complications or bleeding tendency. 【DOSAGE AND ADMINISTRATION】… 3. To prevent coagulation of blood during extracorporeal blood circulation (ex. hemodialysis, plasmapheresis) in patients with bleeding complications or bleeding tendency. For priming, wash and fill the blood route with 20mg of nafamostat mesilate dissolved in 500mL of saline after dissolving in the small amount of 5% glucose solution or water for injection. After beginning of extracorporeal circulation, inject continuously at a rate of 20~50mg/hr as nafamostat mesilate dissolved in 5% glucose solution into anticoagulant injection line. The dosage should be appropriately adjusted according to the patient's symptoms. The average dosage from clinical study is 35mg/hr as nafamostat mesilate. … **Manufactured by** Yuhan corporation. **Distributed by** SK chemicals **Revised:** May 28. 2018.

※ For the details, you are recommended to check on prescribing information. The latest approved label is available on the website following. http://nedrug.mfds.go.kr

References 1. Prescribing information of Futhan for Inj., Futhan50 for Inj. NeDrug. [Cited 2019 MAR 27] Available from: http://nedrug.mfds.go.kr/ **2.** H. Hirasawa. Theoretical consideration and practice of CHDF. Japan総合医学史:1998. p.25–30. **3.** Ohtake Y et al. Contrib Nephrol. 1991;93:215–7. **4.** Shinoda T. Contrib Nephrol. 2010;166:119–25. **5.** Akizawa T et al. Artificial Organs. 1991;14:209–12. **6.** Kim HC et al. Korean J Nephrol. 2004 Nov;23(6):920–6. **7.** Akizawa T et al. Nephron. 1993;64(3):376–81. **8.** Park Il et al. Korean J Nephrol. 2009;28(3):205–10. **9.** Hwang SD et al. Int J Artif Organs. 2013 Mar;36(3):208–16. **10.** Choi JY et al. Medicine (Baltimore). 2015 Dec;94(52):e2392

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Samsca® Tablet ADPKD product information summary [INDICATION] To slow the progression of cyst development and renal insufficiency of autosomal dominant polycystic kidney disease (ADPKD) in adults with CKD stage 1 ~ 4 at initiation of treatment with evidence of rapidly progressing disease. **[DOSAGE & ADMINISTRATION] Tolvaptan must only be prescribed by physicians who got registered in Risk Management Program to the patients who have agreed and signed on conditions specified in Risk Management Program.** Patient should follow this program. And, to mitigate the risk of significant and/or irreversible liver injury, **blood testing for hepatic transaminases and bilirubin is required prior to initiation of SAMSCA, continuing monthly for 18 months and at regular 3 monthly intervals thereafter.** The initial dose is 60 mg tolvaptan per day as a split-dose regimen of 45 mg + 15 mg (45 mg taken upon waking and prior the morning meal and 15 mg taken 8 hours later). The initial dose is to be titrated upward to a split-dose regimen of 90 mg tolvaptan (60 mg + 30 mg) per day and then to a target split-dose regimen of 120 mg tolvaptan (90 mg + 30 mg) per day, if tolerated, with at least weekly intervals between titrations. Dose titration has to be performed cautiously to ensure that high doses are not poorly tolerated through overly rapid up-titration. Patients may down-titrate to lower doses based on tolerability. Patients have to be maintained on the highest tolerable tolvaptan dose. ※ Samsca® Tablet has an indication for hyponatremia as well. For further information, please refer to the latest prescribing information at www.otsuka.co.kr.

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SAM-21-003 | 20210602 approved

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190725-KRE-BQAD01-25-01

[제품명] 크레메진세립(구형흡착탄) **[성분 및 함량]** 1포(2g) 중 구형흡착탄 2g
[효능효과] 만성신부전증(진행성)에 대한 요독증 증상의 개선 및 투석도입의 지연 **[용법용량]** 성인 1일 3회, 1회 2그램(1포) 복용
[사용상의 주의사항] 1. 다음 환자에는 투여하지 말 것 – 소화관 통과장애가 있는 환자 (배설에 지장을 초래할 염려가 있다)
※기타 자세한 사항은 제품설명서를 참고하십시오.

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Reference 1. Haruhiko Ueda et al. *Ther Apher Dial.* 2007;11(3):189-95 **2.** Maeda K et al. *J Int Med Res.* 2009;37(1):205-213 **3.** Niwa T et al. *Kidney Int.* 1997;62:S23-28

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Reference 1. Patrick Martin, et al. Am J Kidney Dis. 2011;57(5):700-706 2. Fosrenol® SmPC, Mar 2018 3. Hutchison AJ, et al. Nephrology (Carlton). 2016 Dec;21(12):987-994.

[Prescribing Information]

포스레놀정500/750밀리그램 포스레놀산1000밀리그램

[주성분] Lanthanum Carbonate (란타늄 탄산염) 포스레놀정500밀리그램 1정(약954mg) 중 란타늄으로서 500mg, 포스레놀정750밀리그램 1정(약 1431mg) 중 란타늄으로서 750mg, 포스레놀산1000밀리그램 1포(약 1908mg) 중 란타늄으로서 1000mg **[효능 · 효과]** 혈액투석이나 복막투석을 받는 만성신부전 환자 또는 인 제한 식이요법만으로 혈청 인산 수치가 충분히 조절되지 않고 1.78 mmol/L (약 5.5mg/dL) 이상인 투석을 하지 않는 만성 신장 질환 환자의 고인산혈증 치료 **[용법 · 용량]** 성인(65세 이상의 고령자 포함): 포스레놀은 매 식사와 함께 혹은 식후 즉시 분복한다. 정제의 경우, 이 약을 그대로 삼키지 않고 반드시 씹어서 복용해야 한다. 씹는 것을 용이하게 하기 위해 이 약을 부수어 복용할 수 있다. 분말의 경우 이 약을 소량의 부드러운 음식에 섞어서 즉시(15분이내) 복용해야 한다. 이 약은 녹지 않으므로 복용을 위해 액체에 녹이지 않는다. 혈청 인산 농도는 란탄으로서 750mg/일 용량에서 조절되기 시작하였고, 대부분의 환자에서 1500~3000mg/일 용량에서 적정 혈청 인산농도로 조절되었다. **[이상반응]** 가장 흔하게 보고된 이상반응은 두통 및 알러지 피부 반응을 제외하고 위장관계 증상이었다. 위장관계 증상은 이 약을 식사와 함께 투여 시 발생빈도가 최소화되고, 일반적으로 투여가 지속될수록 약해진다.

※ 보다 자세한 내용은 제이더블유중외제약 홈페이지(http://www.jw-pharma.co.kr)나 식품의약품안전처 온라인의약도서관(http://drug.mfds.go.kr)를 참고하시기 바랍니다.

KOR/C-APROM/KOR//0870

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서울시 서초구 남부순환로 2477(구:서초동 1424-2) JW타워
제품에 대한 상세한 내용은 제품 설명서나 본사 홈페이지를 참조하시기 바랍니다.

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만성콩팥병 환자의 신기능 악화 지연을 위해,
포시가®로 환자를 지켜주세요

- SGLT2i 중 **최초**이자 **유일**하게 **만성 콩팥병 적응증** 획득[1]
- 당뇨 유무와 관계없이 만성 콩팥병 환자에서 **신기능 악화, ESKD, 신장 또는 심혈관 질환으로 인한 사망위험 39% 감소**[2,*]
- 제 2형 당뇨환자에 **알부민뇨 개선 및 악화감소** 이점[3]

일러스트는 가상의 환자입니다.

* The primary outcome was a composite of a sustained decline in the estimated GFR of at least 50%, end-stage kidney disease, or death from renal or cardiovascular causes. (HR 0.61, 95% CI 0.51-0.72; P<0.001)

SGLT2i, sodium-glucose cotransporter 2 inhibitor; ESKD, end-stage kidney disease; HR, hazard ratio; CI, confidence interval

1. 포시가® 국내 허가사항(https://nedrug.mfds.go.kr, as of 12-Aug-2021) **2.** Heerspink HJL et al. Dapagliflozin in Patients with Chronic Kidney Disease N Engl J Med. 2020; 383:1436-1446.; **3.** Mosenzon Ofri. et al. The Effect of Dapagliflozin on Albuminuria in DECLARE-TIMI58. Diabetes Care. 2021 Jul 7;dc210076. doi: 10.2337/dc21-0076. Online ahead of print.

포시가 정10밀리그램 (다파글리플로진프로판디올수화물)

전문의약품

【성분·함량】
이 약 1정 (약 260mg) 중
유효성분: 다파글리플로진프로판디올수화물 (별규) 12.3mg (다파글리플로진으로서 10mg)
첨가제: 무수유당(동물유래성분, 기원동물: 소, 사용부위: 우유), 미결정셀룰로오스, 스테아르산마그네슘, 오파드라이Ⅲ노란색(85F92582), 이산화규소, 크로스포비돈

【효능·효과】
1. 제2형 당뇨병: 이 약은 제2형 당뇨병 환자의 혈당 조절을 향상시키기 위해 식사요법 및 운동요법의 보조제로 투여한다.
- 단독요법
- 병용요법
혈당이 충분히 조절되지 않는 제2형 당뇨병 환자 중 심혈관계 질환이 확인되었거나 심혈관계 위험인자가 있는 환자에서 심혈관계 사건 발생에 대한 영향은 '사용상의 주의사항, 11. 전문가를 위한 정보 3) 임상시험 정보' 항을 참고한다.
2. 만성 심부전: 좌심실 수축기능이 저하된 만성 심부전(NYHA class II-IV) 환자에서 심혈관 질환으로 인한 사망 및 심부전으로 인한 입원 위험성 감소
이 약은 다른 심부전 표준요법과 병용하여 투여한다.
3. 만성신장병: 만성 신장병 환자에서 추정 사구체 여과율 [estimated glomerular filtration rate (eGFR)]의 지속적인 감소, 말기 신장병에 도달, 심혈관 질환으로 인한 사망 및 신장 관련 사망 위험성 감소
이 약은 다른 신장병 표준요법과 병용하여 투여한다.

【용법·용량】
<u>제2형 당뇨병</u>
단독 요법 및 추가 병용 요법
이 약의 권장 용량은 단독 요법 및 인슐린 등 다른 혈당 강하제와의 추가 병용 요법에 대하여 1일 1회 10mg이다. 이 약을 인슐린 또는 설포닐우레아와 같은 인슐린 분비 촉진제와 병용하여 사용하는 경우, 저혈당의 위험을 줄이기 위해 더 낮은 용량의 인슐린 또는 인슐린 분비 촉진제를 고려할 수 있다.
초기 병용요법
이전 당뇨병 약물치료를 받은 경험이 없는 경우 메트포르민과 병용투여 시, 이 약의 초기 권장용량은 1일 1회 5mg 또는 1일 1회 10mg이다.
<u>만성 심부전 및 만성신장병</u>
이 약의 권장용량은 1일 1회 10 mg이다.
<u>특수 집단</u>
신장애
- eGFR 45mL/min/1.73m^2 미만 : 혈당조절 개선 목적으로 이 약을 투여하는 것은 권장되지 않는다.
- eGFR 25mL/min/1.73m^2 미만 : 만성 심부전 및 만성 신장병 환자에게 이 약의 투여를 시작하는 것은 권장되지 않는다.
- 투석 중인 환자 : 이 약을 투여하지 않는다.
간장애
경증 또는 중등증의 간장애 환자에 대한 용량 조절은 필요하지 않다. 중증의 간장애 환자에 대하여, 시작 용량으로 5 mg이 권장된다. 내약성이 양호한 경우, 이 용량은 10mg으로 증가시킬 수 있다.
고령자 (≥ 65세)
연령에 근거한 용량 조절은 권장되지 않는다.
소아
만 18세 미만의 소아에 대한 다파글리플로진의 유효성과 안전성은 확립되지 않았다. 관련 자료가 없다.
<u>투여방법</u>
이 약은 음식 섭취와 관계없이, 1일 1회 하루 중 언제라도 경구 투여할 수 있다. 정제는 통째로 삼켜야 한다.

【사용상 주의사항】
1. 다음 환자에는 투여하지 말 것
1) 이 약의 주성분 또는 첨가제에 대한 과민반응 병력이 있는 환자
2) 제1형 당뇨병 또는 당뇨병성 케톤산증 환자
3) 이 약은 유당 무수물을 함유한다. 갈락토오스 불내성(galactose intolerance), Lapp 유당 분해효소 결핍증(Lapp lactase deficiency) 또는 포도당-갈락토오스 흡수장애(glucose-galactose malabsorption) 등의 유전적인 문제가 있는 환자에게는 투여하면 안된다.
4) 투석 중인 환자
2. 다음 환자에는 신중히 투여할 것
1) 체액량 감소 및 신기능 장애가 있는 환자에서의 투여
이 약은 증상성 저혈압이나 크레아티닌의 급격하고 일시적인 변화로 나타날 수 있는 혈관 내 혈량 저하를 유발할 수 있다. 외국의 시판후 조사에서 이 약을 포함한 SGLT-2 저해제를 투여한 환자에서 급성 신장손상이 보고되었으며, 일부는 입원과 투석을 필요로 하였다. 신기능 장애(eGFR 60mL/min/1.73m^2 미만), 고령자, 루프계 이뇨제 등을 사용하고 있는 환자에서 혈량 저하 또는 저혈압 위험이 증가할 수 있다. 이러한 특징들을 가진 환자에 대해 이 약의 투여를 시작하기 전 체액량 상태 및 신장 기능에 대한 평가가 필요하며, 투여를 시작한 후 저혈압 증상 및 징후와 신기능에 대해 모니터링 한다.
혈당 조절에 대한 이 약의 유효성은 신장 기능에 따라 다르다. 중등도의 신장애가 있는 환자에서 혈당 조절 유효성이 감소하며 eGFR 45mL/min/1.73m^2 미만인 제2형 당뇨환자에서 혈당조절 목적만으로 이 약을 투여하는 것은 권장되지 않는다(용법·용량 항 참조). 중등도의 신장애 환자에서, 이 약을 투여한 피험자들은 위약을 투여한 피험자들에 비해 크레아티닌, 인, 부갑상샘 호르몬(PTH) 상승 및 저혈압의 이상반응을 나타내는 비율이 더 높았다.
이 약은 eGFR 25 mL/min/1.73 m^2 미만인 환자에게 투여를 시작한 경험이 제한적이다.
eGFR 25mL/min/1.73m^2 미만인 만성 심부전 환자 및 만성 신장병 환자에서 이 약의 투여를 시작하는 것은 권장되지 않는다(용법·용량 항 참조).

개정년월일 : 2021년8월12일
보다 자세한 사항은 제품설명서 전문을 참고하시기 바랍니다.
aFOR20210820

KR-9036 | Exp. 2023-08 (Prep.2021-08)

포시가정은 (1) 제2형 당뇨병 환자의 혈당 조절의 향상, (2) 좌심실 수축기능이 저하된 만성 심부전(NYHA class II-IV) 환자에서 심혈관 질환으로 인한 사망 및 심부전으로 인한 입원 위험성 감소, (3) 만성 신장병 환자에서 추정 사구체 여과율 (eGFR)의 지속적인 감소, 말기 신장병에 도달, 심혈관 질환 으로 인한 사망 및 신장 관련 사망 위험성 감소를 효능·효과 로 허가받았습니다. 한국 아스트라제네카는 어떤 상황에서도 포시가의 미허가 사용을 권장하지 않습니다.

AstraZeneca **수입(수입자): 한국아스트라제네카** 서울시 강남구 영동대로 517 아셈타워 21층
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OPTIMIZE TACROLIMUS TROUGH LEVEL![1,2]

astellas

*권장 최저혈중약물농도: 임상 현장에서 이식 후 초기의 최저혈중약물농도는 간이식 환자의 경우 5-20 ng/mL, 신이식 환자의 경우 10-20 ng/mL이었다. 이후 유지기간 동안의 최저혈중약물농도는 간이식 및 신이식 환자에서 5-15 ng/mL이었다.

1. 프로그랍® 제품설명서(작성일:2020.05.14).
2. Wiebe C, *et al.* Class Ⅱ Eplet Mismatch Modulates Tacrolimus Trough Levels Required to Prevent Donor-Specific Antibody Development. *J Am Soc Nephrol* 2017 Nov;28(11):3353-62.

보다 자세한 안전성 정보는 제품설명서를 참고해 주십시오.(제품설명서 작성일 : 프로그랍® 캡슐 2020.05.14).
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AKR-PRGTX-202007-02

The 41st Annual Meeting of
the Korean Society of Nephrology

KSN 2021

FULLY VIRTUAL MEETING
SEP 02-05

PROGRAM BOOK CONTENTS

Overview

Title	The 41st Annual Meeting of the Korean Society of Nephrology (KSN 2021 FULLY VIRTUAL MEETING)
Date	September 2 (Thu) - 5 (Sun), 2021
Hosted by	The Korean Society of Nephrology, Korean Nephrology Research Foundation #301, 23, Apgujenog-ro 30-gil, Gangnam-gu, Seocho-gu, Seoul 06622, Korea **Tel.** +82-2-3486-8736 **Fax.** +82-2-3486-8737 **E-mail.** ksn@ksn.or.kr
Official Language	English, Korean
Program	Opening Ceremony, Plenary Sessions, Invited Lecture Sessions, Oral & Poster Sessions, Technical Exhibition

The Korean Society of Nephrology Organization

Organizing Committee

Congress President	Won Kim, M.D.	**Congress Vice-President**	Joo Hoon Lee, M.D. Yoon Chul Jung, M.D.
Auditor	Seung Jung Kim, M.D.	**President**	Chul Woo Yang, M.D.
		President-elect	Chun Soo Lim, M.D.
Secretary General	Bum Soon Choi, M.D.	**Vice-Secretary General**	Gang Jee Ko, M.D. Byung Ha Chung, M.D. Jang-Hee Cho, M.D.
Editor in Chief, Kidney Research and Clinical Practice	Tae-Hyun Yoo, M.D.	**Director, the Scientific Programs**	Sang Ho Lee, M.D.
Director, the External Affairs and Cooperation	Beom Seok Kim, M.D. Seong kyun Kim, M.D.	**Director, the Collaborative Studies**	Sang Heon Song, M.D.
Director, the Clinical Practice Guidelines	Kook-Hwan Oh, M.D.	**Director, the Insurance and Legal Affairs**	Seok Joon Shin, M.D. Hyung Jong Kim, M.D. Seong Nam Kim, M.D.
Director, the Public Relation	Eun Hui Bae, M.D.	**Director, the Dialysis Quality Assurance**	Young-Ki Lee, M.D. Ki Ryang Na, M.D. Jung Geon Lee, M.D.
Director, the Planning	Chan-Duck Kim, M.D.	**Director, at Large**	Kyung Pyo Kang, M.D. Hye Ryoun Jang, M.D. Won Min Hwang, M.D. Myung-Gyu Kim, M.D. Hyo Sang Kim, M.D.
Director, the Training and Education	Seung Yeup Han, M.D. Se joong Kim, M.D.	**Director, the KORDS**	Yong Kyun Kim, M.D. Jong Ha Park, M.D.

Advisory Board

Acute Kidney Injury	Won Kim, M.D.	**Diabetes and Obesity**	Sang Youb Han, M.D.
Dialysis (HD)	Young-Il Jo, M.D.	**Dialysis (PD)**	Yong Lim Kim, M.D.
Glomerular and Tubulointerstitial Disorders	Ho Jun Jin, M.D.	**Pediatric Nephrology**	Tae Seon Ha, M.D.
Fluid and Electrolyte	Gheun Ho Kim, M.D.	**Hypertension and Vascular Biology**	Su Wan Kim, M.D.
Transplantation	Jong Su Lee, M.D.	**CKD**	Deog Hui Kang, M.D.
Pathology	Beom Jin Lim, M.D.	**Basic Research**	Tae Hwan Kwon, M.D.
Genetic Disease	Yeong Ju Kwon, M.D.	**Geriatric Nephrology**	Soon Ho Kwon, M.D.
Big Data	Tae Ik Chang, M.D.		

Scientific Committee

Chair	Sang Ho Lee, M.D.		
Secretary	Ju-Young Moon, M.D.		
Members	Hee Gyung Kang, M.D.	Eunsil Koh, M.D.	Seo Rin Kim, M.D.
	Jung Tak Park, M.D.	Ji hwan Park, M.D.	Se Won Oh, M.D.
	Yu Ho Lee, M.D.	Beom Jin Lim, M.D.	Jong Cheol Jeong, M.D.
	Hee Yeon Cho, M.D.	Hong Sang Choi, M.D.	Young Rok Ham, M.D.
	Seon Deok Hwang, M.D		

Welcome Message

Dear Colleagues,

On behalf of the Korean Society of Nephrology, we would like to welcome all participants to the 41st Annual Meeting of the Korean Society of Nephrology (KSN 2021 Fully Virtual Meeting).

We organized last year's KSN 2020 virtually due to COVID-19. It was a big challenge, but we nevertheless were able to host the fully virtual meeting successfully thanks to the enthusiastic support and participation of all the members of KSN as well as colleagues from home and abroad.

We believe that the global situation is getting better gradually. However, we are afraid that travel may continue to be difficult yet, so KSN 2021 also is held as a fully virtual meeting. With the experience gained in 2020, we are confident that KSN 2021 will be even more informative with, of course, top priority continuing to be given to the health and safety of our participants.

KSN 2021 is the 6th international meeting since 2016, when the KSN expanded its national scientific meeting to an international meeting. Every year, more than 2,500 kidney professionals attend the annual meeting with some 200 experts from all over the world delivering the latest findings and engaging in high-quality discussions.

Under the theme "New journey of KSN to the world," KSN 2021 covers a wide range of hot topics including Future Medicine, Big Data, and COVID-19 as well as the most recent updates in various fields of nephrology. We have also invited key opinion leaders in the global nephrology community, and organize joint symposia with related societies. We firmly believe that KSN 2021 will be invaluable in deepening your knowledge and broadening your global network.

Once again, we welcome you to virtual KSN 2021 meeting, and please share your valuable expertise with us and enjoy the programs prepared for you at KSN 2021.

Sincerely yours,

Chul Woo Yang, M.D.

President
Korean Society of Nephrology

Won Kim M.D.

Congress President
Korean Society of Nephrology

Program at a glance

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

Day 1 September 2 (Thursday)

Time	Room 1	Room 2	Room 3	Room 4
08:30-10:30	**PG Education 1** Hemodialysis	**PG Education 2** Peritoneal Dialysis	**PG Education 3** Transplantation	
10:30-10:40	Break			
10:40-12:40	**PG Education 4** Interventional nephrology	**PG Education 5** Fluid & electrolyte	**The 1st East-Asian Renal Pathology Conference 1**	**Oral Communications 1** Chronic Kidney Disease 1
12:40-13:40	**Industry Symposium 1**	**Industry Symposium 2**	**Industry Symposium 3**	
13:40-15:40	**Big Data**	**Hypertension and Vascular Biology**	**The 1st East-Asian Renal Pathology Conference 2**	**Oral Communications 2** Glomerular Diesease
15:40-16:40	**Acute Kidney Injury 1**	**KSN Research Fund Project /Overseas Research Studies Topic Presentation**	**The 1st East-Asian Renal Pathology Conference 3**	**Oral Communications 3** Inherited Kidney Disease/ Pediatric Nephrology
16:40-17:40				**Oral Communication 4** Chronic Kidney Disease 2
17:40-17:50	Break			
17:50-18:00	**Opening Remarks**			
18:00-19:00	**Plenary Lecture 1** Benjamin Humphreys			

Day 2 September 3 (Friday)

Time	Room 1	Room 2	Room 3	Room 4
08:30-10:30	**Acute Kidney Injury 2**	**Kidney Transplantation 1**	**KSN-EDTA: COVID Session**	**Oral Communications 5** Acute Kidney Injury
10:30-10:40	Break			
10:40-12:40	**R&D in Nephrology**	**Hemodialysis 1**	**Basic Research**	**Oral Communications 6** Kidney Transplantation
12:40-13:40	**Industry Symposium 4**	**Industry Symposium 5**	**Industry Symposium 6**	
13:40-14:00	Break			
14:00-15:00	**Plenary Lecture 2** Best Abstracts			
15:00-17:00	**Pediatric Nephrology**	**Diabetes and Obesity**	**Award Session** (15:00-16:20)	**Becoming a New Basic Researcher**
17:00-19:00	**Genetic Disease**	**Peritoneal Dialysis**	**Oral Communications 7** Hypertension/ Fluid, Electrolyte & Acid Base	**Future medicine/Hot issue**

Program at a glance

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

Day 3 September 4 (Saturday)

Time	Room 1	Room 2	Room 3	Room 4
08:30-10:30	**Chronic Kidney Disease**	**Kidney Transplantation 2**	**KSN-ISN Joint Symposium**	**Oral Communications 8** Dialysis HD, PD
10:30-10:40	Break			
10:40-12:40	**Glomerulonephritis**	**Hemodialysis 2**	**KSN-TSN-JSDT Joint Symposium**	**40th Anniversary Symposium 1** National Policy for Chronic Kidney Disease
12:40-13:40	**Industry Symposium 7**	**Industry Symposium 8**	**Industry Symposium 9**	
13:40-14:00	Break			
14:00-15:00	**Plenary Lecture 3** Christoph Wanner			
15:00-17:00	**Fluid and electrolyte**	**KDIGO-KSN Joint Symposium**	**APSN-KSN CME Course 1**	**40th Anniversary Symposium 2** New journey of KSN to the World
17:00-18:00	**Geriatric Nephrology**		**APSN-KSN CME Course 2**	**Oral Communications 9** Diabetic Nephropathy/ Geriatric Nephrology
18:00-19:00				

Day 4 September 5 (Sunday)

Time	Room 1	Room 2	Room 3	Room 4
08:30-10:30	**Nephrology Board Review Course 1**	**Dialysis Specialist Physician Course 1**	**Dialysis Nurse Course 1**	**KSN-KSH Joint Symposium (Korean Society of Hypertension)**
10:30-12:30	**Nephrology Board Review Course 2**	**Dialysis Specialist Physician Course 2**	**Dialysis Nurse Course 2**	**KSN-KES Joint Symposium (Korean Endocrine Society)**
12:30-13:30	**Industry Symposium 10**	**Industry Symposium 11**	**Industry Symposium 12**	
13:30-15:30	**National Projects in Nephrology**	**KORDS Report / Dialysis center Accreditation**	**KSN Cooperative Study**	**KSN-KSCN Joint Symposium (Korean Society of Clinical Nutrition)**
15:30-17:30	**Ethics Education** 필수강의 윤리교육	**Kidney Academy**		
17:30-18:30			**General Assembly**	

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Day 1 September 2 (Thursday)

08:30-10:30 PG Education 1 (Hemodialysis)

Vascular access for Hemodialysis

KOR↔ENG Room 1

Chair(s) **Ki Ryang Na** Chungnam National University, Korea

Common complications of vascular access	**Hyung Seok Lee** Hallym University, Korea
Monitoring/Surveillance for AV access flow dysfunction	**Do Hyoung Kim** Hallym University, Korea
Treatment of AV access flow dysfunction	**Jin Ho Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
Treatment of AV access dysfunction	**Sangeon Gwoo** Changwon Hanmaeum Hospital, Korea

08:30-10:30 PG Education 2 (Peritoneal dialysis)

From Basic to Clinical Practice

KOR↔ENG Room 2

Chair(s) **Kook-Hwan Oh** Seoul National University, Korea
Joon Young Doh Yeungnam University, Korea

Peritoneal Anatomy & Transport Physiology	**Hyo Jin Kim** Pusan National University, Korea
Peritoneal Dialysis Adequacy: A Paradigm Shift	**Isaac Teitelbaum** University of Colorado, USA
Fluid Management in PD & UF Failure	**Seok Hui Kang** Yeungnam University, Korea
PD Peritonitis Update: From Guidelines to Innovations	**Philip Li** The Chinese University of Hong Kong, Hong Kong

08:30-10:30 PG Education 3 (Transplantation)

How to manage patients planning a kidney transplantation

ENG Room 3

Chair(s) **Joong Kyung Kim** Bong Seng Memorial Hospital, Korea
Dong-Wan Chae Seoul National University, Korea

How to manage patients planning a kidney transplantation	**Eun Jeong Ko** The Catholic University of Korea, Korea
How to manage the dialysis patients waiting for deceased donor kidney transplantation	**Hee Jung Jeon** Hallym University, Korea
How to manage live kidney donor after donation	**Hye Ryoun Jang** Sungkyunkwan University, Korea

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10:40-12:40	**PG Education 4 (Intervention Nephrology)** *Interventional Procedure in Nephrology: Video Demonstration*	KOR↔ENG	Room 1
Chair(s)	**Sung Gyun Kim** Hallym University, Korea **Myung-Gyu Kim** Korea University, Korea		
Tips and pitfalls during kidney biopsy		**Hae Ryoung Yun** Yonsei University, Korea	
PD catheter insertion by nephrologist		**Seok Hui Kang** Yeungnam University, Korea	
Tips and pitfalls of tunneled HD catheter insertion		**Ki Ryang Na** Chungnam National University, Korea	
Vascular access Doppler Ultrasound by nephrologist		**Eun Jung Kim** Hallym University, Korea	

10:40-12:40	**PG Education 5 (Fluids & electrolytes)** *Electrolyte and Acid/Base Disorders*	KOR↔ENG	Room 2
Chair(s)	**Gheun-Ho Kim** Hanyang University, Korea **Sejoong Kim** Seoul National University, Korea		
Pathophysiology and treatment of hyponatremic disorders		**Sejoong Kim** Seoul National University, Korea	
Approach to hypernatremia and polyuric disorders		**Hong Sang Choi** Chonnam national University, Korea	
Differential diagnosis of hypokalemic metabolic alkalosis		**Young Eun Kwon** Myongji Hospital, Hanyang University, Korea	
Pathophysiologic approach to metabolic acidosis		**Jun-Ya Kaimori** Osaka University, Japan	

10:40-12:40	**The 1st East-Asian Renal Pathology Conference 1** *Session 1 Special guest lecture & case conference*	ENG	Room 3
Chair(s)	**Yong-Jin Kim** Kyungpook National University, Korea **Hua Su** Huazhong University of Science and Technology, China		
Opening Ceremony		**Yeong-Jin Choi** The Catholic University of Korea, Korea **Gang Liu** Peking University, China **Akira Shimizu** Nippon Medical School, Japan	
Special guest lecture: Pathology and Pathogenesis of ANCA-associated Glomerulonephritis		**Charles Jennette** University of North Carolina at Chapel Hill, USA	
Case 1 (K)		**Yuil Kim** The Catholic University of Korea, Korea	
Case 2 (C)		**Xuanli Tang** Hangzhou Hospital of Traditional Chinese Medicine, China	

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13:40-15:40	**The 1st East-Asian Renal Pathology Conference 2** *Session 2 Lecture & case conference*	ENG	Room 3
Chair(s)	**Zhigang Zhang** Shanghai Medical College, China		
Review lecture 1: Experience with Thrombotic Microangiopathy over the past 20 years in one institution		**Yeong-Jin Choi** The Catholic University of Korea, Korea	
Case 3 (J)		**Kunio Kawanishi** University of Tsukuba, Japan	
Case 4 (K)		**Man-Hoon Han** Kyungpook National University, Korea	
Review lecture 2: Recent topics on novel antigens of membranous nephropathy: including a study of NELL1- and EXT1-associated membranous nephropathy in the Hokkaido area		**Takahiro Tsuji** Sapporo City General Hospital, Japan	

16:00-17:40	**The 1st East-Asian Renal Pathology Conference 3** *Session 3 Lecture & case conference*	ENG	Room 3
Chair(s)	**Ryuji Ohashi** Nippon Medical School, Japan **Hyeon Joo Jeong** Yonsei University, Korea		
Review lecture 3 : Advance on diagnosis and typing of amyloidosis		**Suxia Wang** Peking University First Hospital, China	
Case 5 (C)		**Ruimin Hu** The First Affiliated Hospital of Zhengzhou University, China	
Case 6 (J)		**Yasuhiro Oda** The University of Tokyo, Japan	
Closing Ceremony			

10:40-12:40	**Oral Communications 1** *Chronic Kidney Disease (CKD) 1*	ENG	Room 4
Chair(s)	**Jung Tak Park** Yonsei University, Korea **Kyung-hwan Jeong** Kyung Hee University, Korea		
OC1-01 ~ OC1-12			

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12:40-13:40 Industry Symposium 1

Sponsored by YUHAN

KOR↔ENG Room 1

Chair(s) **Gheun-Ho Kim** Hanyang University, Korea

Management of T2D patients with CKD; before and after EMPA-REG OUTCOME	**Hyoungnae Kim** Soonchunhyang University, Korea

12:40-13:40 Industry Symposium 2

Sponsored by inno.N Innovate New & Next

KOR↔ENG Room 2

Chair(s) **Jung Hwan Park** Konkuk University, Korea

Role of Kremezin as a Strategy for Delaying CKD Progression	**Tae Hyun Ban** The Catholic University of Korea, Korea

12:40-13:40 Industry Symposium 3

Sponsored by astellas

KOR Room 3

Chair(s) **Jong Soo Lee** Ulsan University, Korea

Optimal dosing strategies of maintenance tacrolimus in kidney transplantation	**Jong Cheol Jeong** Seoul National University, Korea

13:40-15:40 Big Data

Big Data in Nephrology: Promises and Pitfalls

KOR↔ENG Room 1

Chair(s) **Tae Ik Chang** National Health Insurance Service Ilsan Hospital, Korea
Dong Ki Kim Seoul National University, Korea

Introduction of National Health Insurance Service Big Data: current status and usage method	**Dongwuk Kim** National Health Insurance Corporation, Korea
Statistical considerations for common biases arising from the analysis of National Health Insurance Big Data	**Sohee Park** Yonsei University, Korea
Effect of variability in creatinine measurement and estimated glomerular filtration rate on study eligibility and interpretation of large-scale data	**Sungjin Chung** The Catholic University of Korea, Korea
Nephrology study using the National Health Insurance Service claims data	**Sehoon Park** Korean Armed Forces Capital Hospital, Korea

13:40-15:40 Hypertension and Vascular Biology

Nocturnal hypertension and BP variability

KOR↔ENG Room 2

Chair(s) **Soo Wan Kim** Chonnam National University, Korea
Kyung Pyo Kang Chonbuk National University, Korea

Approach for isolated nocturnal hypertension and BP variability	**Jong Hyun Jhee** Yonsei University, Korea
Pathophysiology of disrupted circadian rhythm of BP in patients with CKD	**Hayne Cho Park** Hallym University, Korea
Association between BP variability and renal outcome	**Hong Sang Choi** Chonnam National University, Korea
Therapeutic strategies to reduce BP variability and its controversies	**Eun Sil Koh** The Catholic University of Korea, Korea

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13:40-15:40	**Oral Communications 2** *Glomerular disease*	ENG	Room 4
Chair(s)	**Seong Eun Kim** Dong-A University, Korea **Jong Woo Yoon** Hallym University, Korea		
OC2-01 ~ OC2-12			

15:40-17:40	**Acute Kidney Injury 1** *Cause-oriented Approach of AKI*	KOR↔ENG	Room 1
Chair(s)	**Won Kim** Chonbuk National University, Korea **Hyo-Wook Gil** Soonchunhyang University, Korea		
New coming bridge between AKI and CKD: Acute kidney disease		**Jung Nam An** Hallym University, Korea	
Volume management in patients with AKI and heart failure: Cardiorenal syndrome		**Myung-Gyu Kim** Korea University, Korea	
Novel nephrologic approach in hepatorenal syndrome: HRS-AKI		**Jung Pyo Lee** Seoul National University, Korea	
Vigilance regarding for drug induced AKI		**Hyo-Wook Gil** Soonchunhyang University, Korea	

15:40-17:40	**KSN Research Fund Project /Overseas Research Studies Topic Presentation**	KOR↔ENG	Room 2
Chair(s)	**Bum Soon Choi** The Catholic University of Korea, Korea **Hyosang Kim** University of Ulsan, Korea		
Association between copeptin levels and treatment responses to hypertonic saline infusion in patients with symptomatic hyponatremia: A prospective cohort study		**Seon Ha Baek** Hallym University, Korea	
Development of PKD mouse model and effect of AMPK activator		**Hyunsuk Kim** Hallym University, Korea	
Metformin use and cardiovascular outcomes in patients with diabetes and chronic kidney disease: A nationwide cohort study		**Hyoungnae Kim** Soonchunhyang University, Korea	
Clinical relevance of tertiary lymphoid tissues in diabetic kidney disease		**Yu Ho Lee** CHA University, Korea	
Multicentre observational retrospective cohort studies among patients with type 2 diabetes using a common data model of OHDSI		**Yongjin Yi** Dankook University, Korea	
Urinary sediment mRNA as a potent biomarker of IgA nephropathy		**Jin Sug Kim** Kyung Hee University, Korea	
Role of meta-research in the medico-scientific field		**Jae Il Shin** Yonsei University, Korea	

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15:40-16:30	**Oral Communications 3** *Inherited kidney disease/Pediatric nephrology*	ENG	Room 4
Chair(s)	**Jin-Soon Suh** The Catholic University of Korea, Korea **Yo Han Ahn** Seoul National University, Korea		
OC3-01 ~ OC3-06			

16:40-17:40	**Oral Communications 4** *Chronic Kidney Disease (CKD) 2*	ENG	Room 4
Chair(s)	**Jieun Oh** Hallym University, Korea **Gang Jee Ko** Korea University, Korea		
OC4-01 ~ OC4-06			

17:50-18:00	**Opening Remarks**	KOR↔ENG	Room 1

18:00-19:00	**Plenary Lecture 1**	KOR↔ENG	Room 1
Chair(s)	**Won Kim** Chonbuk National University, Korea		
Single cell transcriptomic research in translational medicine		**Benjamin Humphreys** Washington University in St.Louis, USA	

Day 2 September 3 (Friday)

08:30-10:30	**Acute Kidney Injury 2** *New strategies in AKI*	KOR↔ENG	Room 1
Chair(s)	**Sang-kyung Jo** Korea University, Korea **Dong Won Lee** Pusan National University, Korea		
Does ferroptosis explain Nephron Loss?		**Andreas Linkermann** University Hospital Carl Gustav Carus Dresden, Germany	
Tertiary lymphoid tissues: unique microenvironment in injured kidney		**Motoko Yanagita** Kyoto University, Japan	
Kidney-Gut crosstalk in AKI		**Sang-kyung Jo** Korea University, Korea	
Nanoparticle therapy in AKI		**Chang Seong Kim** Chonnam National University, Korea	

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08:30-10:30 Kidney Transplantation 1

Translational approaches in kidney transplantation

KOR↔ENG | Room 2

Chair(s)		
	Jong Soo Lee	Ulsan University, Korea
	Yeong Hoon Kim	Inje University, Korea

Multi-dimensional biomarker as a guide to personalized immunosuppression	**Tara Sidgel** The University of California, San Francisco, USA
What's going on under the surface? cell free DNA and ongoing rejection process	**Philip Halloran** University of Alberta, Canada
Immunologic monitoring through biomarker	**Chan-Duck Kim** Kyungpook National University, Korea

08:30-10:30 KSN-EDTA:COVID Session

COVID-19 in CKD patients

ENG | Room 3

Chair(s)		
	Jong Woo Yoon	Hallym University, Korea
	Beom Seok Kim	Yonsei University, Korea

The burden of COVID-19 on the population with kidney disease	**Luuk Hilbrands** Radboud University, The Netherlands
COVID-19 experiences in Korea	**Jang-Hee Cho** Kyungpook National University, Korea
Growth of peritoneal dialysis post-COVID-19	**Edwin A. Brown** Imperial College London, UK
Immunology of COVID-19 infection	**Eui-Cheol Shin** Korea Advanced Institute of Science and Technology (KAIST), Korea

08:30-10:30 Oral Communications 5

Acute Kidney Injury

ENG | Room 4

Chair(s)		
	Se Won Oh	Korea University, Korea
	Dae Eun Choi	Chungnam National University, Korea

OC5-01 ~ OC5-12

10:40-12:40 R&D in Nephrology

R&D cases in kidney disease

KOR↔ENG | Room 1

Chair(s)		
	Sangho Lee	Kyung Hee University, Korea
	Eun Hui Bae	Chonnam National University, Korea

APX-115 against diabetic kidney disease: from bench to phase II clinical trial	**Hunjoo Ha** Ewha Womans University, Korea
Localization of Continuous Renal Replacement Therapy Device	**Dong Ki Kim** Seoul National University, Korea
A new treatment approach in CKD using 4D bioprinting technology	**Jina Ryu** Rokit Healthcare, Korea
Non-invasive cardiopulmonary monitoring	**Eung Je Woo** Kyung Hee University, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

10:40-12:40	**Hemodialysis I** *Which is the best for my patients?*	KOR↔ENG	Room 2
Chair(s)	**Young-il Jo** Konkuk University, Korea **Dong Ho Yang** CHA University, Korea		
Introduction: Which is the best for my patients?		**Young-il Jo** Konkuk University, Korea	
Conventional hemodialysis		**Young Rok Ham** Chungnam National University, Korea	
What is the best for my patients? Online hemodiafiltration (HDF)		**Ju-Young Moon** Kyung Hee University, Korea	
Expanded hemodialysis		**Seung Seok Han** Seoul National University, Korea	
Panel discussion		**Young Rok Ham** Chungnam National University, Korea **Ju-Young Moon** Kyung Hee University, Korea **Seung Seok Han** Seoul National University, Korea	
Special Lecture: Impact of dialysis therapy on the patient survival		**Bernard Canaud** University of Montpellier, France	

10:40-12:40	**Basic research** *Mechanisms and therapeutic targets of renal inflammation and fibrosis*	ENG	Room 3
Chair(s)	**Tae-Hwan Kwon** Kyungpook National University, Korea **Jihwan Park** Gwangju Institute of Science and Technology (GIST), Korea		
Anti-fibrotic effects of synthetic oligodeoxynucleotide for the regulation of TGF-β1 and Smad expression in kidney fibrosis		**Kwan Kyu Park** The Catholic University of Daegu, Korea	
Prostaglandin E2 receptors as therapeutic targets in renal inflammation and fibrosis.		**Rikke Norregaard** Aarhus University, Denmark	
Mitochondrial dysfunction in renal inflammation and fibrosis		**Ki Wung Chung** College of Pharmacy, Pusan National University, Korea	
Unravelling kidney fibrosis using single-nucleus transcriptomics		**Haojia Wu** Washington University, USA	

10:40-12:40	**Oral Communications 6** *Kidney transplantation*	ENG	Room 4
Chair(s)	**Byungha Chung** The Catholic University of Korea, Korea **Hyeon Seok Hwang** Kyung Hee University, Korea		
OC6-01 ~ OC6-12			

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

12:40-13:40	**Industry Symposium 4** Sponsored by HANDOK	KOR↔ENG	Room 1
Chair(s)	**Young Rim Song** Hallym University, Korea		
Malignant Hypertension and atypical Hemolytic and Uremic Syndrome: who is the chicken, who is the egg?		**Jean-Michel Halimi** Tours University Hospital, France	

12:40-13:40	**Industry Symposium 5** Sponsored by JW Pharmaceutical	KOR↔ENG	Room 2
Chair(s)	**Young Joo Kwon** Korea University, Korea		
Nutrition vs. Phosphate management, Can we strike a balance?		**Hajeong Lee** Seoul National University, Korea	

12:40-13:40	**Industry Symposium 6** Sponsored by BORYUNG	KOR	Room 3
Chair(s)	**Jin Kuk Kim** Soonchunhyang University, Korea		
New clinical outcome of Fimasartan on reducing proteinuria in Korean diabetic nephropathy patients FANTASTIC trial		**Jieun Oh** Hallym University, Korea	

14:00-15:00	**Plenary Lecture 2** *Best Abstract*	KOR↔ENG	Room 1
Chair(s)	**Chun Soo Lim** Seoul National University, Korea **Joo Hoon Lee** University of Ulsan, Korea		
The brain-gut-kidney axis in the development of cognitive dysfunction following acute kidney injury (AKI)		**Young Eun Choi** Korea University Anam Hospital, Korea	
Successful gene correction of Na-Cl cotransporter mutation using CRISPR-Cas9 in kidney organoid generated from Gitelman's syndrome patient-derived iPSC		**Sun-Woo Lim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea	
Single-Cell Transcriptome of Mouse Kidneys Reveals Differential Cellular Alterations in Diabetic Kidney Disease		**Su Woong Jung** Gwangju Institute of Science and Technology (GIST), Korea	
Proteomic Profile of Mesothelial Exosomes Isolated from Peritoneal Dialysis Effluent Of Children with Focal Segmental Glomerulosclerosis		**Edoardo La Porta** Gaslini Children Hospital, Italy	

15:00-17:00	**Pediatric Nephrology** *The transition from adolescence to adulthood - Chronic renal disease*	KOR↔ENG	Room 1
Chair(s)	**Tae-Sun Ha** Chungbuk National University, Korea		
Genetic aspect of IgA nephropathy		**Krzysztof Kiryluk** University of Columbia, USA	
PAX2 related nephropathy		**Jiwon Lee** Korea Disease Control and Prevention Agency, Korea	
School Urine Screening (SUS) program in Korea: History, Outcome, and Perspectives		**Il-Soo Ha** Seoul National University, Korea	
School Urine Screening (SUS) Program in Japan: History, Outcome, Perspectives		**Masataka Honda** Kiyose Children's Hospital, Japan	

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

15:00-17:00 Diabetes and Obesity

The future of diabetes treatment in DKD

KOR↔ENG **Room 2**

Chair(s)
Sang-Youb Han Inje University, Korea
Ju-Young Moon Kyung Hee University, Korea

The therapeutic effects of GLP1-agonists in diabetic kidney disease	**Jong Han Lee** Hanseo University, Korea
GLP1-agonists, to use or not to use in DKD- clinical point of view	**Soo Lim** Seoul National University, Korea
Triglycerides, to target or not to target in DKD - basic point of view	**Wondong Kim** College of Pharmacy, Hanyang University, Korea
Triglycerides, to target or not to target in DKD - clinical point of view	**Eugene Han** Keimyung University, Korea

15:00-16:20 Award Session

KOR **Room 3**

Chair(s) **Ji-Won Min** The Catholic University of Korea, Korea

KSN Young Investigator Award Ceremony	
KSN Young Investigator Award Winner Lecture: Erythropoietin modulates cell cycle arrest to ameliorate kidney fibrosis	**Jong Hyun Jhee** Yonsei University, Korea
KSN Academic Excellence Award Ceremony	
KSN Academic Excellence Award Winner Lecture: Body composition and kidney function	**Jung Tak Park** Yonsei University, Korea
KSN Lifetime Achievement Award Ceremony	
KSN Lifetime Achievement Award remarks	**Seong Nam Kim** Dr.Kim's Medical Clinic, Korea

15:00-17:00 Becoming a New Basic Researcher

Basic and Translational Science

KOR **Room 4**

Chair(s)
Sejoong Kim Seoul National University, Korea
Won-il Jeong KAIST Graduate School of Medical Science and Engineering (GSMSE), Korea

Exploring the hidden mechanism in alcoholic liver disease	**Keungmo Yang** Korea Advanced Institute of Science and Technology (KAIST), Korea
A journey to medical science: critical role of T cell-specific cilia protein	**Jiung Jeong** Korea Advanced Institute of Science and Technology (KAIST), Korea
The path to immunologic research as a medical doctor	**Jieun Oh** Korea Advanced Institute of Science and Technology (KAIST), Korea
Developing imaging technologies for unique and extensive contributions to biomedicine	**Taeyun Ku** Korea Advanced Institute of Science and Technology (KAIST), Korea
From bedside to bench, then to computer	**Su Woong Jung** Gwangju Institute of Science and Technology (GIST), Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

17:00-19:00	**Genetic Disease** *Recent advances in PKD*	KOR↔ENG	Room 1
Chair(s)	**Young Joo Kwon** Korea University, Korea		
Ciliopathy and PKD in pediatrics		**Eujin Park** Hallym University, Korea	
Characteristics and Genetic Influence of ADPKD Rapid Progressor Patients		**Yun Kyu Oh** Seoul National University, Korea	
Treatment of ADPKD in the era of disease modifying treatments ; Focus on Practical Approach		**Fouad Chebib** Mayo Clinic, USA	
Kidney transplantation for ADPKD patients in Japan		**Sumi Hidaka** Shonan Kamakura General Hospital, Japan	

17:00-19:00	**Peritoneal Dialysis** *Current practice patterns and new strategies for PD*	KOR↔ENG	Room 2
Chair(s)	**Yong-Lim Kim** Kyungpook National University, Korea **Tae-Hyun Yoo** Yonsei University, Korea		
Role of SDM in peritoneal dialysis penetration		**Sejoong Kim** Seoul National University, Korea	
Progress of Peritoneal Dialysis Outcomes and Practice Patterns Study phase 2		**Sun-Hee Park** Kyungpook National University, Korea	
Pilot Project of Home Management in Peritoneal Dialysis Patients		**Young-Ki Lee** Hallym University, Korea	
Peritoneal dialysis among elderly patients, benefits and experience		**Yasuhiko Ito** Aichi Medical University, Japan	

17:00-19:00	**Oral Communications 7** *Hypertension / Fluid, Electrolyte & Acid Base*	ENG	Room 3
Chair(s)	**Eun Sil Koh** The Catholic University of Korea, Korea **Jae Hyun Chang** Gachon University, Korea		
OC7-01 ~ OC7-12			

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

17:00-19:00	**Future medicine/Hot issue**	KOR	Room 4
Chair(s)	**Duk-Hee Kang** Ewha Womans University, Korea **Soon Kil Kwon** Chungbuk National University, Korea		
Health effect of PM: Knowns vs. Unknowns (미세먼지의 건강영향: 국제 연구동향)		**Jong Hun Kim** Sungkyunkwan University, Korea	
Research Methodology on PM: Basics and Database available (미세먼지 연구를 계획중인 연구자들에게 알려드리는 연구방법론)		**Sanghyuk Bae** The Catholic University of Korea, Korea	
Basic Research on PM: EWAS in Lung Disease (미세먼지 관련 기초연구: 호흡기질환에서 코호트를 이용한 EWAS)		**Woojin Kim** Kangwon National University, Korea	
Relationship between PM & Kidney Disease (미세먼지와 콩팥병의 관련)		**Jung Pyo Lee** Seoul National University, Korea	

Day 3 September 4 (Saturday)

08:30-10:30	**Chronic Kidney Disease** *Nutrition & QoL in CKD*	KOR↔ENG	Room 1
Chair(s)	**Jung Eun Lee** Sungkyunkwan University, Korea **Jun Chul Kim** CHA University, Korea		
Considerations in nutritional management of CKD patients		**Gang Jee Ko** Korea University, Korea	
HRQOL in CKD-Advance & Challenge		**Kyu-Beck Lee** Sungkyunkwan University, Korea	
A practical approach for salt restriction in CKD		**Kunitoshi Iseki** Clinical Research Support Center, Nakamura Clinic, Japan	
KDOQI-AND 2020 CKD Nutrition guidelines : Dietary Protein Intake in CKD patients		**Talat Alp Ikizler** Vanderbilt University, USA	

08:30-10:30	**Kidney Transplantation 2** *Improving access to kidney transplantation*	KOR↔ENG	Room 2
Chair(s)	**Chan-Duck Kim** Kyungpook National University, Korea **Gyu-Tae Shin** Ajou University, Korea		
Pre-sensitized patients and expanding opportunity by desensitization		**Jaeseok Yang** Yonsei University, Korea	
Current update of ABO incompatible kidney transplantation		**Saito Kazuhide** Niigata University, Japan	
How to reduce disparities in access to kidney transplantation: For elderly, frail patients		**Myung-Gyu Kim** Korea University, Korea	
Optimal utilization of the "marginal kidney"		**Sumit Mohan** Columbia University, USA	

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

08:30-10:30	**KSN-ISN Joint Symposium** *Towards Global Network for Kidney Health Care*	ENG	Room 3
Chair(s)	**Agnes Fogo** Vanderbilt University Medical Center, USA **Beom Seok Kim** Yonsei University, Korea		
Introduction of ISN-GKHA project		**Vivekanand Jha** The George Institute of Global Health, India	
Korean Renal Data System (KoRDS) network		**Jongha Park** Ulsan University, Korea	
Prognostic markers in glomerular diseases		**Agnes Fogo** Vanderbilt University Medical Center, USA	
Korean GN registry network (KoGNet)		**Ho Jun Chin** Seoul National University, Korea	

08:30-10:30	**Oral Communications 8** *Dialysis HD, PD*	ENG	Room 4
Chair(s)	**Kyubok Jin** Keimyung University, Korea **Jang-Hee Cho** Kyungpook National University, Korea		
OC8-01 ~ OC8-12			

10:40-12:40	**Glomerulonephritis** *New approach to management of glomerulonephritis*	KOR↔ENG	Room 1
Chair(s)	**Ho Jun Chin** Seoul National University, Korea **Seung Hyeok Han** Yonsei University, Korea		
Application of C5 inhibitor on glomerular disease.		**Eric Rondeau** Tenon Hospital, France	
Precision medicine in glomerular disease		**Ali Gharavi** Columbia University, USA	
Recent advance in management of minimal change lesion		**Ho Jun Chin** Seoul National University, Korea	
Automated assessment of kidney pathology for glomerular diseases		**Hajeong Lee** Seoul National University, Korea	

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

10:40-12:40 Hemodialysis II

Update on ESRD complications in HD patients

KOR↔ENG Room 2

Chair(s)	**Yang Wook Kim**	Inje University, Korea
	Sug Kyun Shin	National Health Insurance Service Ilsan Hospital, Korea
Antihypertensive medication in HD patients		**Yu Ah Hong** The Catholic University of Korea, Korea
Management of hyperparathyroidism in HD		**Kyung Pyo Kang** Chonbuk National University, Korea
Management of anemia in HD		**Hyosang Kim** University of Ulsan, Korea
Management of intractable uremic pruritus		**Hon-Yen Wu** Far Eastern Memorial Hospital, Taiwan

10:40-12:40 KSN-TSN-JSDT Joint Symposium

Renal Anemia

ENG Room 3

Chair(s)	**Jin-Shuen Chen**	Kaohsiung Veterans General Hospital, Taiwan
	Hirokazu Honda	Showa University, Japan
	Won Kim	Chonbuk National University, Korea
The role of HIF-PH inhibiter in the physiological erythropoiesis		**Takahiro Kuragano** Hyogo College of Medicine, Japan
Anemia management in patients with chronic kidney disease: Taiwan practice guidelines and outcome analysis		**Ko-Iin Kuo** Taipei Tzu Chi Hospital, Taiwan
Renal anemia in Korean dialysis patients & The role of iron replacement therapy		**Hyo Jin Kim** Pusan National University, Korea
New Expectation of Renal Anemia Management		**Jwa-Kyung Kim** Hallym University, Korea

10:40-12:40 40th Anniversary Symposium 1

National Policy for Chronic Kidney Disease

ENG Room 4

Chair(s)	**Chul-Woo Yang**	The Catholic University of Korea, Korea
	Chun Soo Lim	Seoul National University, Korea
National policy for CKD: Korea		**Kook-Hwan Oh** Seoul National University Hospital, PI of Korean CKD Cohort: KNOW-CKD, Korea
National policy for CKD: USA		**Scott Bieber** Kootenai Health, Chair of the ASN Quality Committee, USA
National policy for CKD: Taiwan		**Yi-Wen Chiu** Kaohsiung Medical University Hospital, Chairperson of the CKD Prevention Committee of TSN, Taiwan
National policy for CKD: Japan		**Naoki Kashihara** Kawasaki Medical School, President of Japanese Society of Nephrology, Japan

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

12:40-13:40	**Industry Symposium 7** Sponsored by Baxter	KOR↔ENG	Room 1
Chair(s)	**Yong-Lim Kim** Kyungpook National University, Korea		
What's new trend in PD? | Sharesource		**Jeonghwan Lee** Seoul National University, Korea	

12:40-13:40	**Industry Symposium 8** Sponsored by FRESENIUS MEDICAL CARE	KOR↔ENG	Room 2
Chair(s)	**Joon Ho Song** Inha University, Korea		
How to achieve high convection volumes in post-dilution online hemodiafiltration		**AJin Cho** Hallym University, Korea	

12:40-13:40	**Industry Symposium 9** Sponsored by KYOWA KIRIN	KOR	Room 3
Chair(s)	**Sang-kyung Jo** Korea University, Korea		
Which is more optimal ESA? Short or Long-acting ESA		**Young Youl Hyun** Sungkyunkwan University, Korea	

14:00-15:00	**Plenary Lecture 3**	KOR↔ENG	Room 1
Chair(s)	**Chul-Woo Yang** The Catholic University of Korea, Korea **Sik Lee** Chonbuk National University, Korea		
SGLT2 inhibitor		**Christoph Wanner** University Hospital Wuerzburg, Germany	

15:00-17:00	**Fluids and electrolytes** *Renal Tubular Transport Physiology*	KOR↔ENG	Room 1
Chair(s)	**Kwon Wook Joo** Seoul National University, Korea **Tae-Hwan Kwon** Kyungpook National University, Korea		
Vasopressin-independent pathways for aquaporin-2 activation in the kidney		**Tae-Hwan Kwon** Kyungpook National University, Korea	
Role of the NaCl cotransporter (NCC) in the regulation of Na+ and K+ balance in the kidney		**Gerardo Gamba** Salvador Zubirán National Institute of Health Sciences and Nutrition, Mexico	
Physiology and pathophysiology of claudins in the kidney		**Gheun-Ho Kim** Hanyang University, Korea	

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

15:00-18:00 KDIGO-KSN Joint Symposium

KOR↔ENG Room 2

Chair(s): **Sung Gyun Kim** Hallym University, Korea; **Beom Seok Kim** Yonsei University, Korea

KDIGO Guideline on Diabetes Management in CKD: New Evidence, New Recommendations	**Sophia Zoungas** Monash University, Australia
Paradigm Shift in Diabetes management in Chronic kidney disease-Korean Perspective	**Hoon Young Choi** Yonsei University, Korea
Evaluation and Management of Candidates for Kidney Transplantation	**Helen Pilmore** Auckland City Hospital, New Zealand
Pre-transplant Recipient evaluation & management: An Update in 2021	**Ho Sik Shin** Kosin University, Korea
Updated Guideline for Glomerular Diseases: the Practical Issues as Korean nephrologists	**Hajeong Lee** Seoul National University, Korea
Glomerulonephritis: What's new?	**Sydney Tang** The University of Hong Kong, Hong Kong

15:00-17:00 APSN-KSN CME Course 1

Diabetic kidney disease

ENG Room 3

Chair(s): **Cheol Whee Park** The Catholic University of Korea, Korea; **Muh Geot Wong** The George Institute for Global Health, Australia

Introduction of APSN-KSN CME courses	**Muh Geot Wong** The George Institute for Global Health, Australia
Therapy for DKD beyond SLGT-2 inhibitors?	**Sydney Tang** The University of Hong Kong, Hong Kong
Comparison of APCN DKD clinical practice guidelines and KDIGO guidelines in CKD with diabetes	**Sunita Bavanandan** Hospital Kuala Lumpur, Malaysia
Mechanisms of Adiponectin Action: Implication of Adiponectin Receptor Agonism in Diabetic Kidney Disease	**Yaeni Kim** The Catholic University of Korea, Korea

15:00-17:00 40th Anniversary Symposium 2

New journey of KSN to the world

KOR Room 4

Chair(s): **Bum Soon Choi** The Catholic University of Korea, Korea

Present of the Korean Society of Nephrology	**Chul-Woo Yang** President, Korean Society of Nephrology, Korea
Future of Korean Society of Nephrology	**Chun Soo Lim** President-elect, Korean Society of Nephrology, Korea
코로나 이후 보건의료정책 변화 방향과 학회의 대응	**Jin Yong Lee** HIRA Research Institute, Health Insurance Review and Assessment Service, Korea
AI의 시대, 급속한 변화의 시대에 살아남기	**Taewoong Park** Hanbit Media, Korea
인문학의 견지에서 본 대통령의 리더십	**Tae-Gyun Park** Seoul National University Graduate School of International Studies, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

17:00-19:00	**Geriatric Nephrology** *Assessment and therapeutic considerations for elderly patients with CKD*	KOR↔ENG	Room 1
Chair(s)	**Soon Hyo Kwon** Soon Chun Hyang University, Korea **Sung Joon Shin** Dongguk University, Korea		
Geriatric assessment in advanced kidney disease		**Edwin A. Brown** Imperial College London, UK	
Elderly and frailty in Korean population		**Chang Won Won** Kyung Hee University, Korea	
Shared decision making for elderly patients with CKD		**Byung Chul Yu** Soonchunhyang University, Korea	
Optimal treatment strategy for elderly patients with ESRD		**Jae Won Yang** Yonsei University, Korea	

17:00-19:00	**APSN-KSN CME Course 2** *CKD-MBD*	ENG	Room 3
Chair(s)	**Xue Qing Yu** Guangdong Provincial People's Hospital/Guangdong Academy of Medical Sciences, China **Young Joo Kwon** Korea University, Korea		
Updates on CKD-MBD management		**Rathika Krishnasway** The University of Queensland, Australia	
Vascular calcification on CVD in CKD		**Ji Yong Jung** Gachon University, Korea	
Prevention and management of Fracture in CKD		**Shin Young Ahn** Korea University, Korea	
Nutrition management in CKD		**Angela Wang** The University of Hong Kong, Hong Kong	

17:00-19:00	**Oral Communications 9** *Diabetic nephropathy / Geriatric nephrology*	ENG	Room 4
Chair(s)	**Hyeong-Cheon Park** Yonsei University, Korea **So-Young Lee** CHA University, Korea		
OC9-01 ~ OC9-12			

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

Day 4 September 5 (Sunday)

08:30-10:30 Nephrology Board Review Course 1 별도 등록 필요

Recent update in CKD

KOR Room 1

Chair(s) **Bum Soon Choi** The Catholic University of Korea, Korea

Recent update in the pathogenesis of CKD	**Sun-Hee Park** Kyungpook National University, Korea
Diabetes in CKD	**Sang Heon Song** Pusan National University, Korea
HTN & Heart failure in CKD	**Yang Gyun Kim** Kyung Hee University, Korea
Sarcopenia in CKD	**Young Rim Song** Hallym University, Korea

08:30-10:30 Dialysis Specialist Physician Course 1

New progress in hemodialysis

KOR Room 2

Chair(s) **SungKu Lee** JD Clinic, Korea

Blood pressure and volume management in hemodialysis	**Ki-Pyo Kim** Inha University, Korea
Composition of dialysate, update	**Song In Baeg** Myongji Hospital, Hanyang University, Korea
Essential use of duplex ultrasound for proper vascular access management	**Do Hyoung Kim** Hallym University, Korea
High-flux hemodialysis vs. pre-, post-, mixed- hemodiafiltration	**Mi Jung Lee** CHA University, Korea

08:30-10:30 Dialysis Nurse Course 1

KOR Room 3

Chair(s) **Su-Hyun Kim** Chung-Ang University, Korea
Ho Seok Koo Inje University, Korea

COVID-19 대응 사례 – 개인 의원	**Hankyu Lee** Lee Hankyu Clinic, Korea
투석실에서의 감염 관리	**So Mi Kim** Dankook University Hospital, Korea
투석 환자의 예방접종 (COVID-19 백신 포함)	**Young Rok Ham** Chungnam National University, Korea
혈액투석 중 항응고제 사용의 실제	**Byung Chul Yu** Soonchunhyang University, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

08:30-10:30 KSN-KSH Joint Symposium (Korean Society of Hypertension)

Blood pressure control in specific population

KOR | Room 4

Chair(s): **Sangho Lee**, Kyung Hee University, Korea; **Il Suk Sohn**, Kyung Hee University, Korea

Optimal blood pressure control in dialysis patients	**Kyung Don Yoo**, Ulsan University, Korea
Effect of blood pressure in outcome of KT recipient and donor	**Byungha Chung**, The Catholic University of Korea, Korea
Target blood pressure in elderly patients	**Jinho Shin**, Hanyang University, Korea
Benefit and risk of BP control in heart failure patients	**Hae-Young Lee**, Seoul National University, Korea

10:30-12:30 Nephrology Board Review Course 2 별도 등록 필요

CKD : Practice essentials in medication

KOR | Room 1

Chair(s): **Seungyeup Han**, Keimyung University, Korea

Drug induced kidney disease: how to prevent	**Soon Kil Kwon**, Chungbuk National University, Korea
Anticoagulant in CKD	**Jae Won Yang**, Yonsei University, Korea
Use of RAS inhibitors in advanced CKD	**Jung Tak Park**, Yonsei University, Korea
Role of entresto in CKD	**Ki-Pyo Kim**, Inha University, Korea

10:30-12:30 Dialysis Specialist Physician Course 2

Lingering Issues in dialysis patients

KOR | Room 2

Chair(s): **Jung Geon Lee**, Namseoul Clinic & Dialysis Unit, Korea

Sleep quality and insomnia in hemodialysis patients	**Eun Lee**, Yonsei University, Korea
Nutritional interventions in hemodialysis patients; How to do it?	**Yeji Woo**, Inje University, Korea
Infection control in hemodialysis unit	**Jin Yong Kim**, Incheon Medical Center, Korea
Vaccination protocol in hemodialysis patients	**Yu Bin Seo**, Hallym University, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

10:30-12:30 Dialysis Nurse Course 2 — KOR — Room 3

Chair(s): **Joon Ho Song** Inha University, Korea; **Kyung-hwan Jeong** Kyung Hee University, Korea

투석혈관 유지를 위한 monitoring과 surveillance	**So Hee Han** Hallym University, Korea
투석환자의 적절한 천자법 (어려운 케이스 위주)	**Hye Seon Yu** Inha University, Korea
Quality control for HD patients (투석실 인증평가를 바탕으로)	**Jeonghwan Lee** Seoul National University, Korea
투석 효율의 평가 (Kt/V, URR)	**Jae Wan Jeon** Chungnam National University, Korea

10:30-12:30 KSN-KES Joint Symposium (Korean Endocrine Society) — KOR — Room 4

Endocrine issues in CKD

Chair(s): **Eun Young Lee** Soonchunhyang University, Korea; **Min-Seon Kim** Asan Medical Center, University of Ulsan, Korea

GLP-1R agonist in DKD	**Nam-Hoon Kim** Korea University, Korea
The role of mineralocorticoid receptor antagonist in DKD	**Yu Ho Lee** Cha University, Korea
신장내과 의사가 알아야할 부갑상선 질환	**Nam ki Hong** Yonsei University, Korea
CKD-MBD: 새로운 치료제	**Ji Eun Kim** Korea University, Korea

12:30-13:30 Industry Symposium 10 Sponsored by Otsuka — KOR — Room 1

Chair(s): **Yun Kyu Oh** Seoul National University, Korea

Tolvaptan in ADPKD. 2 Years in Korea, What have we learnt and what's next viewpoint	**Yong Chul Kim** Seoul National University, Korea

12:30-13:30 Industry Symposium 11 Sponsored by SK chemicals — KOR — Room 2

Chair(s): **Gheun-Ho Kim** Hanyang University, Korea

Current and update in secondary hyperparathyroidism	**Hyeon Seok Hwang** Kyung Hee University, Korea

12:30-13:30 Industry Symposium 12 Sponsored by AstraZeneca — KOR — Room 3

Chair(s): **Hyeong-Cheon Park** Yonsei University, Korea

FORXIGA, The evolution of SGLT2i in CKD management	**Ju-Young Moon** Kyung Hee University, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

13:30-15:30 National Projects in Nephrology — KOR — Room 1

Chair(s): **Seungyeup Han** Keimyung University, Korea; **Yong Kyun Kim** The Catholic University of Korea, Korea

National Projects in Nephrology: The KNOW-CKD Study	**Kook-Hwan Oh** Seoul National University, Korea
Korean Organ Transplantation Registry	**Jaeseok Yang** Yonsei University, Korea
이식 거부반응 및 장기생존 바이오마커를 이용한 신장이식 면역조절 기술 개발	**Sangho Lee** Kyung Hee University, Korea
2019년도 환자중심 의료기술 최적화 연구사업: 의료기술 비교평가 후향연구	**Gang Jee Ko** Korea University, Korea

13:30-15:30 KORDS Report / Dialysis center Accreditation — KOR — Room 2

Chair(s): **Jongha Park** Ulsan University, Korea; **Ki Ryang Na** Chungnam National University, Korea

우리나라 투석 환자 특징	**Young Eun Kwon** Myongji Hospital, Hanyang University, Korea
우리나라 투석환자의 생존률 변화와 위험인자	**Tae Hee Kim** Inje University, Korea
2021년 인공신장실 인증평가 결과 보고	**Young-Ki Lee** Hallym University, Korea
건강보험에서 운영하는 다양한 학회주도 인증제도의 현재	**Won Min Hwang** Konyang University, Korea
의료급여 환자의 혈액투석 수가 개정	**Seong Nam Kim** Director, the Insurance and Legal Affairs committee of KSN, Korea

13:30-15:30 KSN-KSCN Joint Symposium (Korean Society of Clinical Nutrition) — KOR — Room 4

쿠킹클래스와 함께 하는 맛있는 저칼륨/저인 식이

Chair(s): **Seo Rin Kim** Pusan National University, Korea; **Sung Nim Han** Seoul National University, Korea

Hyperphosphatemia in ESRD: Consequences and Medical managements	**Ji Yong Jung** Gachon University, Korea
Low-phosphorus diet for ESRD patients in South Korea	**In Seok Lee** Kyung Hee University Medical Center, Korea
Cooking class to restrict phosphorus & potassium intake	**Eun Jeong Choi** Hanyang University, Korea
Cooking class to restrict phosphorus & potassium intake	**Woo Jeong Kim** Gangnam Severance Hospital, Korea

KOR Korean ENG English KOR↔ENG KOR/ENG Simultaneous Interpretation Plenary Lecture & Official Program Oral Communication (English)

13:30-15:00 KSN Cooperative Study — KOR — Room 3

Chair(s): **Sang Heon Song**, Pusan National University, Korea; **Tae-Hyun Yoo**, Yonsei University, Korea

근거중심의 고령 만성콩팥병 환자 진료지침	**Yu Ah Hong**, The Catholic University of Korea, Korea
The optimal management of CKD-MBD in dialysis patients	**Young Joo Kwon**, Korea University, Korea
혈액투석 중인 말기신부전 환자에서 인공신경망을 통한 혈중 적혈구 수치 예측 알고리즘 개발과 적절한 에리스로포이에틴 용량 처방에 대한 연구	**Tae-Hyun Yoo**, Yonsei University, Korea

15:30-17:30 Ethics Education 필수강의 윤리교육 — KOR — Room 1

R&D cases in kidney disease

Chair(s): **Byung Chul Shin**, Chosun University, Korea; **Sung Hyun Son**, Hanseo Hospital, Korea

소셜네트워킹 및 미디어 이용에서의 의료윤리	**ChangYun Woo**, Asan Medical Center, University of Ulsan, Korea
의사 집단행동에 대한 윤리적 문제	**Deoksun An**, Korea University, Korea
인공신장실에서의 윤리적 문제	**SangWook Kim**, Gwangmyeong Soo medical clinic, Korea
인공신장실에서 흔히 접하는 법적문제	**Dooryoon Hyun**, SeSeung LLC, Korea

15:30-17:30 Kidney Academy — KOR — Room 2

The updates in the treatment of chronic kidney disease

Chair(s): **Yoon Chul Jung**, Bundang Jesaeng General Hospital, Korea

Management and treatment goals for patients with chronic kidney disease	**Won Min Hwang**, Konyang University, Korea
Application of new therapeutic agents in renal anemia	**Ji-Won Min**, The Catholic University of Korea, Korea
Treatment for mineral bone disorder in chronic kidney disease	**Shin Young Ahn**, Korea University, Korea
New treatment drugs for hyperkalemia	**Kyeong Min Kim**, Eulji University, Korea

17:30-18:30 General Assembly — KOR — Room 3

Day 1 September 2 (Thursday)

10:40-12:40 **Oral Communications 1** Chronic Kidney Disease 1 **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC1-01	Associations between urinary 11-dehydrothromboxane B2 and laboratory parameters in obese and non-obese aspirin-treated patients with cardiorenal syndrome	**Kseniya Lukyanets** Saint Petersburg State University, Russia
OC1-02	Behavioral characteristics and related factors among chronic kidney disease patients of South Korea during COVID-19 pandemic	**Yaerim Kim** Keimyung University, Korea
OC1-03	The effect of a patient blood management program on renal outcome in patients with chronic kidney disease	**Hyeon Jin Min** Korea University Anam Hospital, Korea
OC1-04	Omega-3 polyunsaturated fatty acid attenuates uremia-induced brain damage in mice.	**Young Rok Ham** Chungnam National University, Korea
OC1-05	The rapid decline of kidney function is associated with the rapid decline of health-related quality of life in chronic kidney disease: from the KNOW-CKD study	**Hyo Jin Kim** Pusan National University Hospital, Korea
OC1-06	Fibrotic severity of non-alcoholic fatty liver disease is associated with higher risk of incident chronic kidney disease	**Mi Jung Lee** CHA University, Korea
OC1-07	Oral Fungal Infection in CKD Population	**MohanKumar N** Manipal University, India
OC1-08	Association the Triglyceride-glucose (TyG) index and Coronary Artery Calcification Progression in Non-Diabetic Chronic Kidney Disease	**Kang Yoon Lee** Gangnam Severance Hospital, Korea
OC1-09	Novel Approach to the Relation of Environmental Exposure and Kidney Dysfunction: Data analysis from Korean National Environmental Health Survey (KoNEHS) 2015-2017	**Kyung Don Yoo** Ulsan University Hospital, Korea
OC1-10	Different impact of dietary fatty acid on all-cause mortality according to the kidney function based on the nation-wide population study	**Yaerim Kim** Keimyung University, Korea
OC1-11	Time restricted feeding ameliorates fibrosis by restoring disrupted peripheral clock in adenine induced CKD model	**Yina Fang** Korea University Anam Hospital, Korea
OC1-12	Peripheral neuropathy can predict all-cause mortality in chronic kidney disease: Results from the National Health and Nutrition Examination Survey, 1999 to 2004	**Jin Seon Jeong** Seoul Veterans Hospital, Korea

Day 1 September 2 (Thursday)

13:40-15:40 **Oral Communications 2** Glomerular Disease **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC2-01	The novel neutrophil population, Siglec-F+ neutrophils, induced renal fibrosis by collagen production	**Seungwon Ryu** Seoul National University, Korea
OC2-02	Circulating proteasome activity in Plasma as a Potential Biomarker of Chronic Kidney Disease	**Soie Kwon** Seoul National University Hospital, Korea
OC2-03	Involvement of Mechanosensitive Channel Piezo1 in Renal Fibrosis	**Xiaoduo Zhao** Sun Yat-sen University, China
OC2-04	Antifibrotic effects of the chemokine (C-C Motif) Ligand 8 blockade in kidney tubular epithelial cell	**Jangwook Lee** Dongguk University Ilsan Hospital, Korea
OC2-05	P-glycoprotein Expressing IL-17A+IFN-γ+ Th17/1 Cells Are Refractory to glucocorticoids in nephrotic syndrome	**Akhilesh Jaiswal** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
OC2-06	Canagliflozin attenuates Renal Tubulointerstitial Fibrosis of Hyperuricemic Nephropathy in Rats	**Jiali Wei** Hainan General Hospital, China
OC2-07	The impact of obesity on glomerulonephritis: A multicenter cohort study of kidney biopsy over 40 years	**Tae-Bum Kim** Korea University Anam Hospital, Korea
OC2-08	Depleted HDAC3 attenuates hyperuricemia-induced renal interstitial fibrosis via miR-19b-3p/SF3B3 axis	**Ziyang Jing** Hainan General Hospital, China
OC2-09	Analysis on the change of m6A RNA methylation profile in kidney fibrosis	**Ara Cho** Seoul National University, Korea
OC2-10	Characteristics of rapid progressors in the Korean patients with Autosomal Dominant Polycystic Kidney Disease: results from the KNOW-CKD study	**Hayne Cho Park** Kangnam Sacred Heart Hospital, Korea
OC2-11	Protective Effect of SIRT-1 Activator on Endothelial Dysfunction and Renal Injury in Aging Mice Kidney	**Hyung Duk Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC2-12	Mitochondrial structural and ROS system are down-regulated under renal fibrosis process	**Soie Kwon** Seoul National University Hospital, Korea

Day 1 September 2 (Thursday)

15:40-16:30 **Oral Communications 3** Inherited Kidney Disease/Pediatric Nephrology **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC3-01	Modeling of fabry disease nephropathy using patient derived induced pluripotent stem cells and kidney organoids	**Sheng Cui** The Catholic University, Korea
OC3-03	Efficacy and safety of long-term use of Rituximab in pediatric patients with nephrotic syndrome	**Naye Choi** Seoul National University Hospital, Korea
OC3-04	Acute pyelonephritis and urinary tract infections in pediatric patients: the diagnostic and prognostic role of High Mobility Group Box-1 (HMGB1)	**Antonio Lacquaniti** Papardo Hospital, Italy
OC3-05	P-gp and/or HDAC2 regulates steroid responsiveness in childhood nephrotic syndrome	**Harshit Singh** Sanjay Gandhi post Graduate institute of Medical Science, India
OC3-06	Paricalcitol attenuated cyst growth and renal fibrosis via modulation of phenotype transition of renal tubular cells in polycystic kidney	**Jung Won Lee** Ewha Womans University, Korea

Day 1 September 2 (Thursday)

16:40-17:40 **Oral Communications 4** Chronic Kidney Disease 2 ENG **Room 4**

Presentation No.	Title	Presenting Author
OC4-01	Dietary fiber intake amount affects the beneficial effects of dietary potassium on reduced prevalence of chronic kidney disease	**Jeonghwan Lee** Seoul National University
OC4-02	The role of STAT3 against fibrosis injury in human podocyte and tubular epithelial cell through proteomic profiling	**Semin Cho** Seoul National University Hospital, Korea
OC4-03	The effect of DNA methylation in the development of CKD in middle aged general population: an Epigenome-Wide Association Study using Korean Genome and Epidemiology Study database.	**Ji Eun Kim** Korea University Guro Hospital, Korea
OC4-04	Erythropoiesis stimulating agent inhibit proximal tubular cell G2/M arrest to attenuate renal fibrosis	**Donghwan Oh** Gangnam Severance Hospital, Italy
OC4-05	Graphene Quantum Dots alleviate fibrosis of subtotal 5/6 nephrectomy (5/6NX) via enhancing mitochondrial ATP Anaplerosis	**Kyu Hong Kim** Seoul National University, Korea
OC4-06	Fibrotic burden in patients with hepatitis B virus-related cirrhosis is independently associated with adverse kidney outcomes	**Chan-Young Jung** Severance Hospital, Korea

Day 2 September 3 (Friday)

08:30-10:30 **Oral Communications 5** Acute Kidney Injury — ENG — Room 4

Presentation No.	Title	Presenting Author
OC5-01	Continuous renal replacement therapy for acute kidney injury in critically ill patients with cancer	**Da Woon Kim** Pusan National University Hospital, Korea
OC5-02	RNA methylation signaling pathway mediated by METTL3 affects the development of acute kidney injury and chronic kidney disease transition	**Jeonghwan Lee** Seoul National University
OC5-03	IL-2/Anti-IL-2 complex attenuates renal cold ischemia reperfusion injury after kidney transplantation through expansion of regulatory T cells.	**Joon Young Jang** Seoul National University Hospital, Korea
OC5-04	Withdrawal from exposure to particulate matter results in reversible changes in the kidney	**Sung Gi Yoon** Korea University Ansan Hospital, Korea
OC5-05	Anti-apoptotic and anti-fibrotic effect of crocetin against cisplatin-induced acute kidney injury in rats via PI3K/Akt/Nrf2 pathway	**Deepika Singh** Rama University, India
OC5-06	Prediction of the Clinical Outcomes in Patients with CRRT using Body Composition Monitoring: A Machine Learning Approach to a Multicenter Cohort Study	**Kyung Don Yoo** Ulsan University Hospital, Korea
OC5-07	Comparison of outcomes of mild and severe community- and hospital-acquired acute kidney injury	**Kristianne Rachel Medina - Liabres** University of Santo Tomas Hospital, Philippines
OC5-08	GDF-15 predicts in-hospital mortality of critically ill patients with acute kidney injury requiring continuous renal replacement therapy	**Soojee Jeon** Kyungpook National University Hospital, Korea
OC5-09	The effects of salt modification on the repair of ischemic acute kidney injury	**Junseok Jeon** Samsung Medical Center, Korea
OC5-10	Initial emergency room - 6 hours Urine Volume is an Important Factor for Critically ill Patient's Survival.	**Soo Hyun Han** Chungnam National University Hospital, Korea
OC5-11	KIDNEY DYSFUNCTION AND COVID-19: CHARACTERISTICS, PREDICTIVE FACTORS, AND INFLUENCE OF AGE	**Edoardo La Porta** Gaslini Children Hospital, Italy
OC5-12	BBuilding a Prediction Model for Postoperative Acute Kidney Injury using Machine Learning	**Ji Won Min** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea

Day 2 September 3 (Friday)

10:40-12:40 **Oral Communications 6** Kidney transplantation **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC6-01	Risk of new-onset atrial fibrillation among heart, kidney and liver transplant recipients: insights from a national cohort study	**Wei Syun Hu** China Medical University Hospital, Taiwan
OC6-02	Discovery of cellular and genetic signatures of immune tolerance in kidney transplant recipients through single cell RNA sequencing analysis	**Hanbi Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC6-03	Anti-C4d chimeric antigen receptor regulatory T cells suppressed allograft rejection in ABO-incompatible heart transplantation	**Sun-Kyung Lee** Seoul National University Hospital, Korea
OC6-04	Criteria of suitable candidates for expanded criteria donor kidney transplantation	**Tai Yeon Koo** Seongnam Citizens Medical Center, Korea
OC6-05	Economic and Insurance Outcomes for Living Kidney Donors and Matched Comparators in Korea	**Sehoon Park** Korean Armed Forces Capital Hospital, India
OC6-06	Effect of minicircle vector encoding anti-CD25/IL-10/CXCR3 fusion protein in allograft rejection model	**Yoo-Jin Shin** The Catholic University, Korea
OC6-07	The cumulative dose-dependent benefit of metformin in kidney transplantation recipients	**Soie Kwon** Seoul National University Hospital, Korea
OC6-08	Comparison of CT Volumetry vs Nuclear Renography to Predict Remaining Kidney Function After Uni-nephrectomy in Living Kidney Donors	**Sang Hun Eum** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC6-09	Mortality Risk Factors of COVID-19 Infection in Kidney Transplantation Recipients: A Systematic Review and Meta-Analysis of Cohorts and Clinical Registries	**Suwasin Udomkarnjananun** Chulalongkorn University, Thailand
OC6-10	Non-invasive diagnosis for acute rejection using blood mRNA signature reflecting allograft status in kidney transplantation	**Ahrim Han** Kyung Hee University Hospital at Gangdong, Korea
OC6-11	High pretransplant FGF-23 level is associated with poor graft survival and persistent vitamin D insufficiency in kidney transplant patients	**Jung Hwa Ryu** Ewha Womans University, Korea
OC6-12	Prolonged IL-6 secretion activates inflammation amplifier loop (IL-6+IL-17) in the fibroblast derived from Chronic antibody mediated rejection in renal allograft recipient	**Narayan Prasad** Sanjay Gandhi Postgraduate Institute of Medical Sciences, India

Day 2 September 3 (Friday)

17:00-19:00 **Oral Communications 7** Hypertension / Fluid, Electrolyte & Acid Base — ENG — Room 4

Presentation No.	Title	Presenting Author
OC7-01	Duloxetine reduces lithium-induced polyuria by increasing aquaporin-2 transcription	**Sua Kim** Hanyang University, Korea
OC7-02	Tolvaptan resistance predicts short-term poor prognosis in oncologic patients with the syndrome of inappropriate anti-diuresis	**Antonio Lacquaniti** Papardo Hospital, Italy
OC7-03	Effect of Water Intake and Water Balance on All-cause and Cardiovascular Mortality based on the Nation-Wide Population Study	**Seonmi Hwang** Seoul National University Hospital, Korea
OC7-04	N-3-oxododecanoyl homoserine lactone induces receptor-interacting protein kinase 1-dependent apoptosis in synergy with lipopolysaccharide in endothelial cells	**Hyang Yun Lee** Chung-Ang University Hospital, Korea
OC7-05	Cardiovascular and renal outcomes of the new intensive blood pressure target in chronic kidney disease population in Korea	**Soo-Young Yoon** Kyung Hee University Medical Center, Korea
OC7-06	Paricalcitol ameliorates hypoxia- and TGF-γ1-induced injury in kidney pericytes	**Jeong-Hoon Lim** Kyungpook National University Chilgok Hospital, Korea
OC7-07	Protective effect of Resveratrol on glycocalyx loss due to endothelial cell dysfunction in renal aging	**Donghyuk Kang** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC7-08	CT-derived renal sinus fat quality and quantity and cardiometabolic risk	**Haekyung Lee** Soonchunhyang University Seoul Hospital, Korea
OC7-09	Protective and anti-inflammatory effects of N-Acetylcysteine in pulmonary artery hypertension model of rat	**Rahul Kumar** Jagannath Kishore College, India
OC7-10	Self management for pregnant women with hypertension during the Covid 19 pandemic in Indonesia	**Indra Suardi** Hasanuddin University Makassar, Indonesia
OC7-11	Correlation of Systolic Blood Pressure and Vascular Damage Status After Intervention of Synbiotic Drink of Stelechocarpus burahol with Lactobacillus casei and Lactobacillus plantarum Isolates: A Dyslipidemic Rats Model Study	**Alfian Novanda Yosanto** Universitas Islam Indonesia, Indonesia
OC7-12	Low estimated GFR predicts hemorrhagic transformation in acute ischemic stroke: A meta-analysis	**Gaurav Nepal** Tribhuvan University Institute of Medicine, Nepal

Day 3 September 4 (Saturday)

08:30-10:30 **Oral Communications 8** Dialysis HD, PD **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC8-01	Change of peritoneal proteomes in response of fibrotic injury and Cyclo His-Pro treatment	**Ji Eun Kim** Korea University Guro Hospital, Korea
OC8-02	Phosphodiesterase-5 inhibitor/SB204741 in combination almost completely ameliorate fibrotic potential of human peritoneal fibroblasts isolated from CAPD patients	**Saurabh Chaturvedi** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
OC8-03	The Association Between Body Composition Parameters and Quality of Life in Peritoneal Dialysis Patients	**Seon Mi Kim** Seoul National University Hospital, Korea
OC8-04	Sitagliptin treatment for peritoneal mesothelial cell tight junction proteins and function in peritoneal dialysis	**Chor Ho Jo** Hanyang University, Korea
OC8-05	Circulating Endostatin Levels and Cardiac Mortality in Hemodialysis Patients	**Miji Kim** Kyung Hee University Hospital at Gangdong, Korea
OC8-06	Steady exercise improves hand grip and leg muscle strength in hemodialysis patients	**Ran-hui Cha** National Medical Center, Korea
OC8-07	Intradialytic Monitoring of Stroke Volume using EIT: A Feasibility Study	**Ahrim Han** Kyung Hee University Hospital at Gangdong, Korea
OC8-08	Nutritional intervention in intensive care unit patients undergoing continuous renal replacement therapy	**Jihyun Yang** Korea University Anam Hospital, Korea
OC8-09	Dry weight adjustments for hemodialysis patients using machine learning.	**Hae Ri Kim** Chungnam National University Sejong Hospital, Korea
OC8-10	A Study of prevalence of Hepatitis C Virus (HCV) infection in End Stage Renal Disease (ESRD) patients on maintenance Hemodialysis and efficacy of Sofosbuvir/Velpatsavir and Sofosbuvir/Daclatsavir regimen	**Manzoor Parry** Sher-I-Kashmir Institute of Medical Sciences, India
OC8-11	Serum free light chains in hemodialysis patients: a bridge between inflammation, immune system dysfunction and mortality risk	**Antonio Lacquaniti** Papardo Hospital, Italy
OC8-12	Comparison of Anticoagulation and no Anticoagulation in Patients with Atrial Fibrillation on Dialysis: A Single-Center Retrospective Study	**Miryung Kim** Wonju Severance Christian Hospital, Korea

Day 3 September 4 (Saturday)

17:00-19:00 **Oral Communications 9** Diabetic nephropathy / Geriatric nephrology **ENG** **Room 4**

Presentation No.	Title	Presenting Author
OC9-01	PTEN-induced kinase 1 exerts a protective effect in diabetic tubulopathy by attenuating necroptosis.	**Yun Jung Ko** Bundang CHA General Hospital, Korea
OC9-02	In-silico Interaction Studies Of Marine Organisms Metabolites With Drug Target SIRT1 Of Diabetic Kidney Disease	**Chakresh Kumar Jain** Jaypee Institute of Information Technology, India
OC9-03	Metabolic images using fluorescence lifetime imaging reveals metabolic alteration in proximal tubular epithelial cells in type 2 diabetes	**Woo Young Kwon** Kyung Hee University, Korea
OC9-04	Spexin-based galanin receptor 2 agonist (NS200) improves diabetic nephropathy in type 2 diabetes	**Boo Yeun Park** Korea University Ansan Hospital, Korea
OC9-05	Modulation of STAT3 ameliorates mitochondrial dysfunction induced by high glucose stimulation	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
OC9-06	A virtual diagnosis of diabetic nephropathy using metabolomics in place of kidney biopsy	**Da Woon Kim** Pusan National University Hospital, Korea
OC9-07	Targeting Nox with Pan-Nox Inhibitor in aging diabetic kidney	**Sung Gi Yoon** Korea University Ansan Hospital, Korea
OC9-08	Urine myo-inositol, the novel prognostic biomarker for diabetic kidney disease: a targeted metabolomics study using NMR	**Soie Kwon** Seoul National University Hospital, Korea
OC9-09	Gymnema Sylvestre Extract Attenuate The Pathological Progression Of Diabetic Nephropathy In Rats	**Sumit Rajput** Bharati Vidyapeeth Deemed University, India
OC9-10	Cardiovascular death in patients with type 2 diabetes with or without kidney disease: a nationwide population-based study	**Semin Cho** Seoul National University Hospital, Korea
OC9-11	Protective effect of AM095, a lysophosphatidic acid receptor 1 antagonist, on renal aging	**Yongjie Jin** The Catholic University of Korea, Korea
OC9-12	Exploration study on Advanced Directives Decision-Making Experiences of Korean Elderly Patients with End-Stage of Renal Disease	**Soo-Young Yu** Jeonju University, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
2023	A mitochondrial cardiolipin targeting peptide ameliorates acute kidney oxidative damage	**Soie Kwon** Seoul National University Hospital, Korea
2024	Retroperitoneal Fibrosis with Postrenal Acute Kidney Injury Responding to Steroid Treatment: A Case Report	**Soyoung Lee** Eulji University Hospital, Korea
2026	Anuria in a patient following COVID-19 infection	**Bhavesh M** All India Institute of Medical Sciences, India
2044	Clinical characteristics of acute kidney injury in patients with glyphosate surfactant herbicide intoxication	**A Young Cho** Presbyterian Medical Center, Korea
2051	Renal outcome of heart failure patients with left ventricular assist device	**Ho Jin Jeon** Samsung Medical Center, Korea
2078	Acute Kidney Injury due to Intravenous Detergent Administration: A Case Report	**Sungbin Park** Konyang University Hospital, Korea
2087	Expansion and Characterization of Regulatory T cell Populations from Acute Kidney Injury Patients	**Ye Na Kim** Kosin University Gospel Hospital, Korea
2101	The study of circuit survival during continuous renal replacement therapy	**Jae Seok Kim** Wonju Severance Christian Hospital, Korea
2122	Measurement of Serum Total Cholesterol and Kidney Malondialdehyde Levels on High-Fat Induced Rats (Rattus Norvegicus) after Intervention of Synbiotic Drink of Stelechocarpus burahol with Lactobacillus casei and Lactobacillus plantarum Isolates	**Alfian Novanda Yosanto** Universitas Islam Indonesia, Indonesia
2208	Potential Nephrotoxicity of Phellinus Linteus	**Jin Ho Hwang** Chung-Ang University Hospital, Korea
2209	Nephrotoxicity of Inonotus Obliquus	**Jin Ho Hwang** Chung-Ang University Hospital, Korea
2210	Effect of fluid overload on survival in patients with sepsis-induced acute kidney injury receiving continuous renal replacement therapy	**Il Young Kim** Pusan National University Yangsan Hospital, Korea
2211	Acute kidney injury presenting as Plasma cell leukemia	**Amar Ranjan** All India Institute Of Medical Science, India

Acute Kidney Injury

Abstract No.	Title	Presenting Author
2251	CO releasing molecule-2 ameliorates acute kidney injury through mitochondrial fitness	**Jamal Uddin** Ewha Womans University, Korea
2260	Genomic background analysis of recovery phase after ischemic/ reperfusion injury stage in aging kidneys with mice model	**Min Jee Jo** Korea University Guro Hospital, Korea
2270	Platelet lymphocyte ratio as a prognostic factor in non septic acute kidney injury outcome.	**Ha Nee Jang** Gyeongsang National University Hospital, Korea
2271	A case of rhabdomyolysis with acute kidney injury complicated by posterior reversible encephalopathy syndrome (PRES)	**Chang Min Heo** Inje University Haeundae Paik Hospital, Korea
2282	Pembrolizumab induced focal segmental glomerulosclerosis	**Hakeong Jeon** Pusan National University Hospital, Korea
2294	Coronavirus (COVID-19) induced oxidative stress and proinflammatory cytokines leads to Acute Kidney Injury (AKI).	**Rajiv Nehra** Rajkiya Medical College, Jalaun (Orai), U.P, India
2300	Ginsenoside Rg3 attenuates ischemia reperfusion induced renal injury in mice via induction ofautophagy flux.	**Jin Ah Shin** Chungnam National University, Korea
2308	Incidence and risk factors associated with fenofibrate-induced acute kidney injury	**Seongmin Kim** Gyeongsang National University Changwon Hospital, Korea
2343	URINARY TIMP2*IGFBP7 IS AN EARLY BIOMARKER OF ACUTE KIDNEY INJURY AND EARLY PREDICTS CRRT START IN CRITICALLY ILL PATIENTS	**Antonio Lacquaniti** Papardo Hospital, Italy
2356	Preoperative Steroids in the Prevention of Post Cardiopulmonary Bypass-Associated Acute Kidney Injury	**Martin Kristoffer Ogbac** Perpetual Help Medical Center - Las Piñas, Patna, Philippines
2358	Incidence, risk factors and prognosis of acute kidney injury in hospitalized acute cholangitis patients.	**Woo Ram Bae** Gyeongsang National University Changwon Hospital, Korea
2360	2-Mercaptoethanol protects DNA damage induced by renal ischemia and reperfusion injury	**Daeun Moon** Jeju National University, Korea
2364	Validation of prediction model for successful discontinuation of continuous renal replacement therapy	**Junseok Jeon** Samsung Medical Center, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
2367	Acute kidney injury in patients with severe fever with thrombocytopenia syndrome	**Jinmi Lee** Kangwon National University Hospital, Korea
2388	Biological effect of cirsiliol on xanthine oxidase: Medicinal importance and therapeutic benefit in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
2389	Biological effect of nicotiflorin against renal impairment: Therapeutic benefit and pharmacological potential in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
2396	Rac1 inhibition mitigates ischemia/reperfusion-induced renal injury	**Min Jung Kong** Kyungpook National University, Korea
2398	Eculizumab therapy on a patient with co-existent lupus nephritis and C3 mutation-related atypical haemolytic uremic syndrome: a case report	**Mi Jung Kim** Asan Yuri Hospital, Korea
2498	Pathologic findings of acute kidney injury caused by primary hyperparathyroidism	**Tae Hyun Ryu** Bong Seng Memorial Hospital, Korea
2505	Changes experienced by patients with chronic kidney disease during hemodialysis therapy and the factors that influence it	**Supriadi Supriadi** Universitas Terbuka Majene, Indonesia
2519	Acute kidney injury and its outcomes in patients with Covid -19–A Prospective cohort at a single center in Pakistan	**Faiza Saeed** The Indus Hospital, Pakistan
2554	Outcome of pregnancy associated acute kidney injury requiring hemodialysis: A case series from eastern part of India	**Amresh Krishna** Indira Gandhi Institute of Medical Sciences, Patna, India
2575	Kidney ischemia-reperfusion induces lung injury and lung cell cilia disruption via oxidative stress	**Young Kwon Han** Kyungpook National University, Korea
2578	Mental Health Problems, Digital Aging, And Risk Mitigation in The Older People with Acute Kidney Injury Disease	**Rosinta Hotmaida Pebrianti Purba** The Ministry of National Development Planning, Indonesia
2583	Kidney Disease Risk Factor for productive age in Indonesia Using IFLS 5	**Derizal Derizal** State Islamic Institute of Bukittinggi, Indonesia

Acute Kidney Injury

Abstract No.	Title	Presenting Author
2588	Response and dynamics of renal function for transplant-eligible multiple myeloma patients who were treated with novel agent: multicenter retrospective study	**Yaeni Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2591	Water Therapy: To Reduce The Risk Of Acute Kidney Injury.	**Muhammad Irzaq** Padang State University, Indonesia
2592	Tranexamic acid-induced acute bilateral cortical necrosis in epidural hematoma patient	**Byung Chul Shin** Chosun University Hospital, Korea
2602	Beryllium Induced Acute Renal Injury: Reversal by Combination Therapy of Aloe vera with piperine	**Narottam Das Agrawal** Rajkiya Medical College, Jalaun (Orai), U.P, India

Inherited Kidney Disease (Pediatric nephrology)

Abstract No.	Title	Presenting Author
2138	Comprehensive Genetic Diagnosis of Pediatric Patients with Cystic Kidney Disease	**Jeesu Min** Seoul National University Hospital, Korea
2143	Ceriazirconia antioxidant nanoparticles attenuate kidney injury in Fabry disease model by enhancing autophagy flux	**Se-Hee Yoon** Konyang University, Korea
2194	Genotype-phenotype analyses in Korean X-linked Alport syndrome: a multicenter study	**Ji Hyun Kim** Seoul National University Bundang Hospital, Korea
2228	Role of P-glycoprotein and Multidrug Resistance-associated Protein-1 and effect of mdr-1 gene polymorphism on P-gp expression in Idiopathic Nephrotic Syndrome in children	**Harshit Singh** Sanjay Gandhi post Graduate institute of Medical Science, India
2292	Korea, Republic of	**Young-jin Song** Chuncheon Sacred Heart Hospital, Korea
2568	Human kidney organoids revealed the therapeutic efficacy of glutathione for renal Fabry disease	**Jinwon Kim** The Catholic University, Korea

Diabetic Nephropathy

Abstract No.	Title	Presenting Author
2130	Immunohistochemical Expression of Orai1 in Human Diabetic Nephropathy and Its Significance for Prognosis and as Therapeutic Target	**Yooujin Kwak** Yonsei University Wonju, Korea
2156	Advantages of metformin therapy for the prevention and mitigation of diabetic foot ulcer in patients with diabetic kidney disease: A real-world evidence from large-scale cohort	**Soie Kwon** Seoul National University Hospital, Korea
2204	Xanthine oxidase inhibitor ameliorates high glucose-induced oxidative stress by activating AMPK via the activation of purine salvage pathway in glomerular endothelial cells	**Yu Ah Hong** The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea
2258	Xanthine oxidase inhibitor attenuates renal oxidative through the inhibition of VEGF-NADPH oxidases in diabetic nephropathy	**Yu Ah Hong** The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea
2378	Clinicopathologic features differentiating diabetic nephropathy and nondiabetic renal disease in patients with type 2 diabetes and rapid and slow progressors in patients with diabetic nephropathy	**Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea
2380	Genetic deletion or pharmacologic intervention of p300/CBP-associated factor attenuates renal injury by suppressing cell apoptosis in diabetes	**Sungjin Chung** The Catholic University, Korea
2397	Placental Growth Factor Deficiency Aggravates Diabetic Nephropathy Related to Glomerular Endothelial Cells and Pericytes Dysfunction	**Ji Hee Lim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2485	DETERMINATION OF OXIDATIVE STRESS LEVEL IN DIABETES PATIENTS WITH OR WITHOUT NAPHROPATHY	**Shweta Katiyar** SBN Government PG College, Barwani, India
2490	Expression of miR-24-3p and miR-198 in newly diagnosed type 2 diabetes mellitus patients	**Prasenjit Mitra** All India Institute of Medical Sciences, Jodhpur, India
2497	Mfn2 Regulate High Glucose-Induced Mitochondrial Dysfunction and Apoptosis in Podocytes through PERK pathway	**Yun Cao** Renmin Hospital of Wuhan University ; Hainan General Hospital, India
2533	Impaired Fasting Glucose is Associated with Renal Hyperfiltration in Young Adults: Nationwide Survey (KNHANE 2007- 2019)	**Seung Kyo Park** Yonsei University, Korea
2590	The role of miR-34a on the glomerular injury in diabetic nephropathy	**Jimin Park** Severance Hospital, Korea

Peritoneal Dialysis

Abstract No.	Title	Presenting Author
2029	Prevalence and Factors associated with Autonomic Dysfunction in Continuous Ambulatory Peritoneal Dialysis Patients	**Thanawat Vongchaiudomchoke** Lampang Hospital, Thailand
2034	The Occurrence of Peritonitis in Patients Undergoing Peritoneal Dialysis Associated with the Weather Variation; A Meta-analysis Study	**Chinakorn Sujimongkol** Loei General Hospital, Thailand
2102	RESULTS OF COMPARISON BETWEEN THE EFFECTIVENESS OF KT/V TESTING AND ANEMIA DURING PERITONEAL DIALYSIS	**Oyunpurev Erdenechimeg** Mongolian national university of mongolia, Mongolia
2137	Psychosocial Impact of COVID-19 pandemic on patients with end-stage kidney disease on peritoneal dialysis	**Boo Yeun Park** Korea University Ansan Hospital, Korea
2291	Successful blockage of a pleuro-peritoneal fistula using pleurodesis in an elderly PD patient	**Myeon-gyu Cho** Chuncheon Sacred Heart Hospital, Korea
2328	The impact of CCL8 on peritoneal fibrosis and inflammatory activity	**Yeonhee Lee** Uijeongbu Eulji Medical Center, Eulji University, Korea
2403	Differential Effect of High Glucose and Mannitol on Binding of Tonicity-Responsive Enhancer Binding Protein (TonEBP) and ß-catenin to the E-cadherin Promoter and Phenotype Transition of Peritoneal Mesothelial Cells (MCs)	**Hyun-Jung Kang** Ewha Womans University Medical Center, Korea
2405	Hyaluronan Synthase 2 plays a key role in Phenotype Transition of Peritoneal Mesothelial Cells (MCs)	**Hyun-Jung Kang** Ewha Womans University Medical Center, Korea
2414	Exploring Agreement and Acceptance between Virtual Home Visits and In-person Home Visits for Peritoneal Dialysis patients—A Paired Study	**Jin Chen** University of Electronic Science and Technology of China, China
2487	Terguride and SB204741 reduce fibrotic potential of human peritoneal fibroblasts by targeting STAT3 pathway in patients receiving continuous ambulatory peritoneal dialysis	**Saurabh Chaturvedi** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
2564	The efficacy of nationwide 'Homecare for peritoneal dialysis patients' : A single-center, retrospective study	**Wonji Jo** Yonsei University, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
1010	LEFT VENTRICULAR REMODELING IN DIALYSIS PATIENTS OF THE URBAN POPULATION OF UZBEKISTAN	**Olimkhon Sharapov** Tashkent Pediatric Medical Institute, Uzbekistan
1011	THE IMPACT OF CARDIOVASCULAR COMORBIDITY ON SURVIVAL IN DIALYSIS PATIENTS	**Olimkhon Sharapov** Tashkent Pediatric Medical Institute, Uzbekistan
1014	INFLUENCE OF CARDIOVASCULAR COMORBIDITY ON THE STRUCTURE OF DEATH IN DIALYSIS PATIENTS	**Olimkhon Sharapov** Tashkent Pediatric Medical Institute, Uzbekistan
1019	ADVERSE EFFECTS ON SURVIVAL OF REUSABLE DIALYSERS	**Olimkhon Sharapov** Tashkent Pediatric Medical Institute, Uzbekistan
2025	Comparison of effect and mechanism between nalfurafine hydrochloride and narrow-band ultraviolet B phototherapy in the treatment of pruritus in hemodialysis patients: A pilot study	**Hanwul Shin** Wonju Severance Christian Hospital, Korea
2028	Risk Factors for Intradialytic Hypotension during Hemodialysis among the End-stage Renal Disease Patients with Pre-existing Autonomic Dysfunction	**Thanawat Vongchaiudomchoke** Lampang Hospital, Thailand
2038	Efficacy and safety of intravenous midazolam/fentanyl for pain relief during vascular access intervention	**Jin Ho Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
2040	A case of endovascular treatment of total occlusive lesion on vascular access through the rendezvous technique	**Heeryong Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
2041	A case of sustained arm edema due to the jailing out of the basilic flow by the bare-metal stent of the cephalic arch	**Heeryong Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
2064	A rare case of VUR-associated hydronephrosis in hemodialysis patient without residual renal function treated by percutaneous nephrostomy.	**Ju Hwan Oh** Presbyterian Medical Center, Korea
2065	Health insurance status is related to risk of mortality and hospitalization in Korean maintenance hemodialysis patients: a longitudinal cohort study	**Gi Hyun Song** Kangnam Sacred Heart Hospital, Korea
2068	Stepwise achievement of high convection volume in post-dilution hemodiafiltration: a prospective observational study	**Hanbyul Choi** Kangnam Sacred Heart Hospital, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
2089	Increased tricuspid regurgitation jet velocity as a predictor of acute decompensated heart failure in end-stage renal disease patients on maintenance hemodialysis	**Youngchan Park** Kosin University Gospel Hospital, Korea
2100	Epicardial adipose tissue radio-density is associated with all-cause mortality in patients undergoing hemodialysis	**Kyoungjin Choi** Soonchunhyang University Seoul Hospital, Korea
2107	Comparison of absolute and functional Iron deficiency anaemia in terminal Chronic Kidney Disease (CKD)	**Sdbpp Samarasekara** University of Peradeniya, Sri Lanka
2123	Dialysis Adequacy Predictions Using a Machine Learning Method	**Hyung Woo Kim** Severance Hospital, Korea
2125	The importance of muscle mass for predicting intradialytic hypotension among patients undergoing maintenance hemodialysis	**Hyung Eun Son** Seoul National University Bundang Hospital, Korea
2132	Vaccination Rates among Hemodialysis Patients in Nueva Ecija & Aurora Provinces	**Rommel Bataclan** University of the East Ramon Magsaysay Medical Centre, Philippines
2154	Current status of consent for hemodialysis as life-sustaining treatment	**Mee Yeon Park** Samsung Medical Center, Korea
2167	Impact of the Platelet distribution width on mortality and cardiovascular events in End-stage kidney disease patients	**Joo Eun Lee** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
2168	Psychological Distress of Patients with End-Stage Kidney Disease Undergoing Dialysis during the 2019 Coronavirus Disease Pandemic	**Jin Young Yu** good-neighbor nursing hospital, Korea
2170	Clinical course, associated factors and outcome of ESRD patients affected with COVID-19: a single centered study.	**Samia Kazmi** Indus Hospital, Pakistan
2183	Nutritional Status Related to Dialysis Adequacy in Maintenance Hemodialysis Patients at Sleman Regional Hospital, Indonesia.	**Nadira Dmas Getare Sanubari** Universitas Gadjah Mada, Indonesia, Indonesia
2190	Detection of subclavian steal syndrome by Doppler ultrasound in hemodialysis patients	**Yongseon Choi** Hallym University Sacred Heart Hospital, Korea
2199	Continuous renal replacement therapy as salvage therapy for critically ill patients with kidney failure with replacement therapy.	**Sungmi Kim** Pusan National University Hospital, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
2200	Integrating system of biosignals during hemodialysis: Continuous mOnitoriNg viTal sIgN dUring hemodialysis (CONTINUAL) registry	**Seon Mi Kim** Seoul National University Hospital, Korea
2201	NT-proBNP for Heart Function and Volume Status in Hemodialysis Patients	**Kyung Ho Lee** Soonchunhyang University Bucheon Hospital, Korea
2206	Impact of neutrophil-to-lymphocyte ratio on aortic artery calcification and bone mineral density in patients with end-stage renal disease	**Tae Hyun Ban** The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea
2213	Low muscle mass in patients receiving hemodialysis: correlations with noncoronary vascular calcification and the incidence of vascular access failure	**Seok-hyung Kim** Chuncheon Sacred Heart Hospital, Korea
2230	Short term aerobic cycling increase bone resorption markers in CKD/ESRD patients with fragility	**Yi-Chou Hou** Cardinal Tien Hospital, Taiwan
2239	Neutrophil extracellular traps and heparin-induced antibodies contribute to vascular access thrombosis in hemodialysis patients	**Jwa-Kyung Kim** Hallym University Sacred Heart Hospital, Korea
2244	Clinical significance of plasma matrix metalloproteinase-2 and matrix metalloproteinase-9 levels to assess the cardiovascular risk in hemodialysis patients	**Taeyoung Yang** Bundang CHA General Hospital, Korea
2268	Circulating Neprilysin Level Predicts the Risk of Cardiovascular Events in Hemodialysis Patients	**Shinyeong Kang** Kyung Hee University Medical Center, Korea
2274	Peripheral Arterial Occlusive Disease in the Vascular Access Arm	**Hansae Kim** Q hospital, Korea
2293	Endovascular management of Inadvertent Subclavian Artery Catheterisation	**Blessy Sehgal Bhalla** Sribalaji action medical institute new delhi, India
2297	Evaluation of failing hemodialysis fistulas with multidetector CT angiography: comparison with conventional angiography	**Blessy Sehgal Bhalla** Sribalaji action medical institute new delhi, India
2301	Fibrosis-4(FIB-4) Index is Associated with Mortality and Nonfatal Cardiovascular Events in End-Stage Kidney Disease Patients Starting Maintenance Dialysis	**Yeon Hee Lee** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
2302	Body fat mass plays a important role in over- or underestimation of bioimpedance spectroscopy-baseddry weight for the patients with hemodialysis	**Hae Ri Kim** Chungnam National University Sejong Hospital, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
2306	Circulating vascular adhesion protein-1 level predicts risk of cardiovascular events and mortality in hemodialysis patients	**Dae Kyu Kim** Kyung Hee University Medical Center, Korea
2314	Effect of cilostazol on arteriovenous fistula in hemodialysis patients	**Jae Wan Jeon** Chungnam National University Sejong Hospital, Korea
2315	Catheter tips in the mid right atrium are associated with increased dialysis adequacy	**Haeun Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2326	Diagnostic Accuracy of Rapid Antibody Testing in Hemodialysis Patients	**Rommel Bataclan** University of the East Ramon Magsaysay Medical Center, Philippines
2330	ACUTE KIDNEY INJURY (AKI), NLR (NEUTROPHIL LYMPHOCYTE RATIO), AND DURATION OF HOSPITALIZATIION, IN COVID-19 PATIENTS WITH MORTALITY OUTCOME IN dr. SARDJITO GENERAL HOSPITAL, YOGYAKARTA	**Wahju Pramono** Dr. Sardjito Hospital, Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University, Yogyakarta, Indonesia
2366	Correlation Between Serum Indoxyl Sulfate Level and Arterial Stiffness in Chronic Hemodialysis Patients: A Preliminary Study	**Tities Indra** University of Indonesia, Indonesia
2409	Cause specific death differs based on HbA1c levels in hemodialysis patient with diabetes	**Dae Kyu Kim** Kyung Hee University Medical Center, Korea
2423	The Role of Cytokine in Critically Ill Patients with Septic Acute Kidney Injury	**Sojung Youn** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2425	Identifying the nutrition-related factors associated with fatigue on MHD Patients: A Cross-sectional study at Sleman Regional Hospital, Indonesia	**Susetyowati Susetyowati** University Gadjah Mada, Indonesia
2430	Serum neutrophil to lymphocyte ratio predicts risk of cardiac event in hemodialysis patients	**JongHo Kim** Kyung Hee University Medical Center, Korea
2431	The Association among carotid IMT, PWV and vascular access failure in hemodialysis patients	**Seok-hyung Kim** Chuncheon Sacred Heart Hospital, Korea
2443	Dialysis SBP is an important BP control marker in hemodialysis; a study of after-dialysis ABPM	**Soon Kil Kwon** Chungbuk National University, Korea
2444	Association of hyponatremia and low bone density in hemodialysis patients	**Younghoon Song** Korea University Guro Hospital, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
2455	Association serum calcium-to-magnesium ratio with coronary artery disease and cerebral vascular complications in dialysis patients: From ORCHESTRA Data	**Su A Lee** Eulji University, Korea
2457	Risk factors for low bone mineral density (BMD) in dialysis patients according to T- or Z-score measured by dual-energy X-ray absorptiometry (DXA)	**Jeong Ah Hwang** Korea University Guro Hospital, Korea
2462	Clinical characteristics of low turnover bone disease in Korean dialysis patients; a multicenter prospective cohort study	**Jaeun Shin** Korea University Guro Hospital, Korea
2479	A year of COVID-19: Ergonomics and good practise of management at INRCA dialysis unit in Ancona, Italy	**Simona Cinaglia** The National Institute for the Care of the Elderly (INRCA), Italy
2486	Comparison of intradialytic blood pressure metrics as a standard indicator of intradialytic hypotension based on all-cause mortality prediction	**Ka Young Kim** Korea University Guro Hospital, Korea
2489	Effect of Art Therapy Intervention during Hemodialysis (HD) Session on Depression and Quality of Life Scores and the Patients' Perception of Dialysis Process	**Ji Hyun Lee** Ewha Womans University Medical Center, Korea
2495	Predictive value of abdominal aortic calcification score in dialysis CKD patients for major adverse cardiac and cerebrovascular events (MACCE)	**Suyeon Hong** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2510	Prevalence of SARS-CoV-2 antibodies in hemodialysis patients in Senegal: a multicenter cross-sectional study.	**Sidy Seck** Faculty of Health Sciences/University Gaston Berger, Senegal
2513	Psycho-social impact of COVID-19 pandemic among Senegalese hemodialysis patients	**Sidy Seck** Faculty of Health Sciences/University Gaston Berger, Senegal
2529	Clinical risk factors of vascular calcification in Korean dialysis patients	**Shin Young Ahn** Korea University Guro Hospital
2530	Clinical implication of magnesium in dialysis patients	**Shin Young Ahn** Korea University Guro Hospital
2543	Influences of ChAdOx1 nCov-19 (AstraZeneca) vaccination on platelet and coagulation factors in hemodialysis patients	**Dongyeon Lee** Asan Medical Center, University of Ulsan, Korea
2545	Muscle Mass Is A Major Prognostic Factor For Survival In Patients Starting Maintenance Hemodialysis	**Eu Jin Lee** Chungnam National University Hospital, Korea
2552	Associations between the Fatigue and Physical function in Hemodialysis patients	**Vifay Samuel Raj V** J S S College of Physiotherapy and JSS hospital, Mysore, India

Hemodialysis

Abstract No.	Title	Presenting Author
2553	The comparison of vancomycin removal between medium cut-off (Theranova®) and high-flux dialyzer	**Hea Ran Lee** Asan Medical Center, University of Ulsan, Korea
2574	Serum albumin is more predictive marker to predict all-cause mortality in elderly HD patients than in younger HD patients	**Yungi Jeon** Kyung Hee University Hospital at Gangdong, Korea
2585	Effects of probiotics, prebiotics, and synbiotics on hemodialysis patients	**Hyeongwan Kim** Chonbuk National University Hospital, Korea
2595	HOLLOW FIBER SEPARATION MEMBRANES FOR HEMODIALISIS	**Andi Nursanti** Bogor Agricultural University, Indonesia
2600	Study of serum β-2 microglobulin in hemodialysis patients	**Khurtsbayar Damdinsuren** First Central Hospital of Mongolia, Mongolia
2610	Correlation between urea reduction ratio and phosphate removal during hemodialysis	**Maryam Begum** Combined military hospital Peshawar, Pakistan

Fluid, Electrolyte and Acid-Base

Abstract No.	Title	Presenting Author
2027	Confirming Genetic abnormalities of hypokalemic periodic paralysis using next-generation sequencing	**Hae Ri Kim** Chungnam National University Sejong Hospital, Korea
2056	Explainable prediction of overcorrection in severe hyponatremia: a post-hoc analysis of the SALSA trial	**Huijin Yang** Hallym University Dongtan Sacred Heart Hospital, Korea
2321	The Incidence of Hyponatremia and value as Risk factors in Alcoholic liver disease	**Jung Yoon Choi** Gyeongsang National University Changwon Hospital, Korea
2346	Fabry disease mouse is resistant to high-salt diet-induced hypertension probably via dysfunctional aquaporin 2	**Sungjin Chung** The Catholic University, Korea
2411	Analysis of glomerular filtration rate and AQP2 expression in male and female mice and high fat diet-fed mice.	**Gwan Beom Lee** Kyungpook National University, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
1009	Clinical and histopathological pattern of glomerular disease diagnosed by kidney biopsy: A single-center experience	**Seunghye Lee** Gyeongsang National University Hospital, Korea
2031	The effect of statins on all-cause and cardiovascular mortality in patients with non-dialysis chronic kidney disease, patients on dialysis, and kidney transplanted recipients: an umbrella review of meta-analyses	**Yoo Jin Kim** Wonju Severance Christian Hospital, Korea
2036	Remission of hematuria is associated with favorable prognosis in IgA nephropathy	**Kyung Ho Lee** Soonchunhyang University Bucheon Hospital, Korea
2046	The proportion of unaffected glomeruli is a robust prognostic factor of kidney outcome in patients with ANCA-associated glomerulonephritis	**Hyun Suk Lee** Samsung Medical Center, Korea
2048	Clinical features and outcomes of elderly patients with antineutrophil cytoplasmic antibody-positive vasculitis: report from a single-center retrospective study	**Hyo Jin Kim** Pusan National University Hospital, Korea
2069	A Rare Case of Thrombotic Thrombocytopenic Purpura with Normal ADAMTS13 Activity Accompanied by Multiple Brain Infarction and Left Ventricle Thrombus	**Eun Ji Kim** The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea
2072	Clinical significance of circulating microRNA-21 in patients with IgA nephropathy	**In O Sun** Presbyterian Medical Center, Korea
2076	Renal Outcomes of IgM Nephropathy: A Comparative Prospective Cohort Study	**Yura Chae** The Catholic University of Korea, Senegal
2085	A novel approach in defining and predicting steroid resistance in nephrotic syndrome in children	**Ievgeniia Burlaka** Bogomolets National Medical University, Ukraine
2096	The comparison of C3 glomerulonephritis with Non-C3 glomerulonephritis in Primary glomerulonephritis	**Ji Won Ryu** Seoul National University Bundang Hospital, Korea
2097	More Severe Mitochondrial Injury at The Time of Diagnosis is Associated with Poor Prognosis in Minimal Change Disease	**Young Seung Oh** Soonchunhyang University Bucheon Hospital, Korea
2104	Effect of indoxyl sulfate on endoplasmic reticulum stress in human astrocytes	**Hyo-Wook Gil** Soonchunhyang University Cheonan Hospital, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
2133	Using Google Trends Data to Study Public Interest in Chronic Kidney Disease (CKD) in Indonesia	**Rizki Febriawan** Utama Hospital Belitung, Indonesia
2134	Transglutaminase 2 blockade ameliorates CKD progression	**Jong Joo Moon** Seoul National University Biomedical Research Institute, Seoul, Korea
2146	Comparison of metabolic profiling according to physiological and fibrotic stress between podocyte and tubular cell	**Hyuk Huh** Seoul National University Hospital, Korea
2155	Urinary findings does not reflect kidney status in IgAnephropathy after steroid therapy	**Won Hee Cho** Sahmyook Medical Center, Korea
2163	Plasminogen Activator Urokinase Receptor and Cardiotrophin-Like Cytokine Factor 1 in serum of patients with nephrotic Syndrome	**Natalia Chebotareva** Sechenov University, Russia
2169	Clnicopathological characteristics and outcome of crescentic glomerulonephritis: A single centre study	**Manzoor Parry** Sher i kashmir institute of medical sciences, India
2171	Bevacizumab-induced glomerular microangiopathy: experience of two clinical cases	**Wanhee Lee** Pusan National University Hospital, Korea
2177	The balance of proinflammatory cytokines and Treg cells in chronic glomerulonephritis	**Natalia Chebotareva** Sechenov University, Russia
2197	Fisetin protects against renal fibrosis in murine unilateral ureteral obstruction	**Ha Young Ju** Pukyong national university, Korea
2203	Clinical characteristics of childhood onset immune complex-mediated MPGN and complement-mediated C3 glomerulopathy	**Jiwon Jung** Asan Medical Center, University of Ulsan, Korea
2227	Aspects of anemia in Sri Lankan CKDu cohort	**Swmpwcib Weerakoon** National Hospital, Kandy, Sri Lanka
2231	Prediction of bleeding complication after percutaneous renal biopsy	**Jangwook Lee** Dongguk University Ilsan Hospital, Korea
2242	Immunoglobulin A Nephropathy in a patient with Neurofibromatosis Type 1	**Harin Rhee** Pusan National University Hospital, Korea
2246	A multicenter, randomized, open-label, comparative, phase IV study to evaluate the efficacy and safety of a combination treatment of mycophenolate mofetil and corticosteroid in advanced IgA nephropathy	**Chan-Young Jung** Severance Hospital, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
2250	PTEN-induced kinase 1 has association with renal aging in the context of inflammatory response	**Jung Sang Hyun** Bundang CHA General Hospital, Korea
2253	Comparison of Renal Outcomes after induction treatment between Segmental and Global Subclasses of Class IV Lupus Nephritis; CMC GN registry	**Dowhee Hwang** The Catholic University of Korea, St. Vincent's Hospital, Korea
2264	Proximal tubule specific Sirt6 has protective roles in UUO-induced renal tubulointerstitial fibrosis.	**Kyung Pyo Kang** Chonbuk National University Hospital, Korea
2269	DIZE (Diminazene aceturate) exacerbates renal fibrosis after unilateral ureteral obstruction in mice	**Yosep Kim** Pukyong National University, Korea
2283	The circulating extracellular vesicle microRNAs related to clinical remission in patients with idiopathic membranous nephropathy	**In O Sun** Presbyterian Medical Center, Korea
2303	The potential roles of NAD(P)H:quinone oxidoreductase 1 in the development of diabetic nephropathy and actin polymerization	**Dae Eun Choi** Chungnam National University Hospital, Korea
2305	Clinical characteristics of adult focal segmental glomerulonephritis according to the classification of 2020 KDIGO guideline	**Eunjeong Kang** Ewha Womans University Medical Center, Korea
2309	Effect of immunosuppressive agents on clinical outcomes in idiopathic membranous nephropathy	**Ji-Young Choi** Kyungpook National University Chilgok Hospital, Korea
2310	Class I HDAC participates in renal interstitial fibrosis in uric acid nephropathy by regulating TGF-β/Smad signaling pathway	**Ziyang Jing** Hainan General Hospial, China
2312	An Unusual Report of Thrombotic Thrombocytopenic Purpura after BNT162b2 COVID-19 Vaccination	**Eun Ji Kim** The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea
2334	SARS-CoV-2 Infection and It's Association With Anti-Glomerular Basement Disease: A Case Series	**Rakesh Sebastin** Government Rajaji Hospital, Madurai Medical College, Tamilnadu, India
2354	Angiotensin II induces oxidative podocyte injury via the upregulation of Nox4	**Tae-Sun Ha** Chungbuk National University, Korea
2373	Mitochondrial Dysfunction in Podocytes Caused by CRIF1 Deficiency Leads to Progressive Albuminuria and Glomerular Sclerosis in Mice	**Jin Young Jeong** Chungnam National University, Korea
2374	The optimal equation of estimated glomerular filtration rates for pediatric chronic kidney disease patients in transition from adolescent to adult: results from KNOW-PedCKD	**Seon Hee Lim** Uijeongbu Eulji Medical Center, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
2392	Visceral Fat increased the Risk of Progression to Chronic Kidney Disease in Non-Obese Korean Adults.	**Dana Choi** Seoul National University, Korea
2441	Rho kinase signal pathway participates in the tubular mitochondrial oxidative injury and apoptosis via regulating mitochondrial dyneins/ biogenic genes in uric acid nephropathys	**Maowei Xie** Hainan General Hospital, China
2446	Long noncoding RNA FGD5-AS1 sponges microRNA-497-5p to regulate hyperuricaemia-induced renal interstitial fibrosis in a rat model involving LIM domain only 7	**Jiali Wei** Hainan General Hospital, China
2460	Clinical features and outcomes of Immunoglobulin G4-related Disease including Immunoglobulin G4-related kidney disease	**Su A Lee** Eulji University, Korea
2488	Hypertriglyceridemia is related to glomerulosclerosis in IgA Nephropathy	**Wonjung Choi** The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea
2504	A multicenter retrospective study of clinical outcomes, treatment and prognosis of glomerulonephritis in elderly patients	**Myungah Ha** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea
2539	Genetic analysis of steroid resistant nephrotic syndrome in eastern India – A single center prospective study.	**Prit Pal Singh** Indira Gandhi Institute of Medical Sciences, India
2547	Ezetimibe ameliorates renal fibrosis via Nrf2-related pathway	**Beom Jin Lim** Gangnam Severance Hospital, Korea
2560	Comparison of mycophenolate mofetil with intravenous cyclophosphamide for induction therapy of lupus nephritis; CMC GN registry	**Sungjoon Hwang** The Catholic University of Korea, St. Vincent's Hospital, Korea
2562	Clinical predictors for treatment response in patients with biopsy-proven Lupus nephritis; CMC GN registry.	**Young Dong Jeon** The Catholic University of Korea, St. Vincent's Hospital, Korea
2579	The difference of Cystatin C- and Creatinine-based estimated GFR may differently affect the risk of all-cause mortality according to renal function.	**Park Hae Sang** Korea University Guro Hospital, Korea
2582	The oxidative phosphorylation inhibitor IM156 suppresses B cell activation by regulating mitochondrial membrane potential and contributes to the mitigation of systemic lupus erythematosus	**Joo Sung Shim** Yonsei University, Korea
2584	Inhibition of STAT3 signaling mitigates inflammation of experimental proliferative glomerulonephritis	**Jae Yoon Park** Dongguk University Ilsan Hospital, Korea
2598	Comparison Between Distal Diuretics and Dietary Sodium Restriction for Hypertension in Chronic Kidney Disease : A Systemic Review	**Shinta Retno Wulandari** Sebelas Maret University, Indonesia

Hypertension and Vascular Biology

Abstract No.	Title	Presenting Author
1022	Biological potential and therapeutic benefit of tricetin on atherosclerosis: Role of scientific data analysis in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
2161	Brachial-ankle pulse wave velocity can be a predictor of the risk of renal outcome and mortality	**Yoo Dong Kyun** Seoul Veterans Hospital, Korea
2188	Anti-atherosclerosis and anti-inflammatory effects of Madhuca longifolia ethanol extracts on rat model	**Sumit Rajput** Bharati Vidyapeeth University, India
2232	A Rare Case of Fibromuscular Dysplasia with Postpartum Renal Artery Rupture in a Woman Without Past History of Hypertension	**Eun-Eun Kim** The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea
2240	Effects of Uremic Serum on Endothelial Cell Damage is Mediated by Excessive Neutrophil Extracellular Trap Formation	**Jwa-Kyung Kim** Hallym University Sacred Heart Hospital, Korea
2284	Angiotensin Receptor-Neprilysin Inhibitor versus Renin-Angiotensin-Aldosterone System Inhibitors in patients with Advanced Chronic Kidney Disease	**Jin Hyuk Paek** Keimyung University, Korea
2349	The comparison of risk factors for coronary artery calcification and abdominal aortic calcification in CKD: from the KNOW-CKD study	**Sunghoon Jung** Kangbuk Samsung Hospital, Korea
2448	Protective effects of White tea (Camellia sinensis) on metabolic functions and oxidative stress in rat model	**Rahul Kumar** J K College, India
2451	Pulse Pressure and the Risk of Renal Hyperfiltration in Young Adults	**Eun JI Yang** Gangnam Severance Hospital, Korea
2476	THE CORRELATION BETWEEN EXERCISE THROUGH A STRUCTURED EDUCATIONAL PROGRAM AND ITS RISK FACTORS FOR PREVALENCE OF HYPERTENSION AMONG CHILDREN IN INDONESIA	**Anna Farhana** Universitas Gadjah Mada, Indonesia
2586	Cardiometabolic Syndrome Prevention: The Role of Dietary Approaches to Stop Hypertension (DASH), Reduced Salt Intake, and Physician Advice as a Lifestyle Change on Hypertension Patients in Adult	**Devi Yulia Rahmi** Andalas University, Indonesia

Transplantation

Abstract No.	Title	Presenting Author
2035	Delayed the ESRD progression by transplanting 3D printed omental patch	**Jina Ryu** Rokit Healthcare, Korea
2067	The Impact of Intra-patient Tacrolimus Trough Level Variability Over 2 Years Post-Transplant on the Long-Term Allograft Outcomes in Kidney Transplant Recipients	**Yohan Park** Konyang University Hospital, Korea
2079	Incident fractures in kidney transplant recipients: A nationwide cohort study	**Da Won Kim** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
2088	Expansion and Characterization of Regulatory T cell Populations from Korean Kidney Transplant Recipients	**Jinhyuk Baek** Keimyung University Dongsan Medical Center, Korea
2091	Effect of sphingosin-1-phosphate lyase inhibitor on skin allograft and transplant rejection avatar model	**Sun Woo Lim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2094	Association between early post-transplant hypertension or related antihypertensive use and prognosis of kidney transplant recipients: a nationwide observational study	**Sehoon Park** Korean Armed Forces Capital Hospital, Korea
2116	Post-Transplant Allograft Outcomes according to Mismatch between Donor Kidney Volume and Body Size of Recipients with Pre-Transplant Diabetes Mellitus	**Yohan Park** Konyang University Hospital, Korea
2126	Perioperative day to day glucose variability and post-transplant diabetes mellitus in non-diabetic kidney transplantation patients	**Ji Hye Kim** Yonsei University, Korea
2151	Clinical Significance of Vitamin D level on Preexisting and Post-transplant Diabetes Mellitus for 6 Years After Kidney Transplantation: KoreaN Cohort Study for Outcome in Patients With Kidney Transplantation (KNOW-KT)	**Woo-yeong Park** Keimyung University Dongsan Hospital, Korea
2217	Comparison of the efficacy and safety between anti-thymocyte globulin versus basiliximab in deceased donor kidney transplantation: A multicenter cohort	**Suyeon Hong** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2222	Outcomes of Live Donor Kidney Transplantation: A Single Center Experience in Mongolia	**Saruultuvshin Adiya** First Central Hospital of Mongolia, Mongolia

Transplantation

Abstract No.	Title	Presenting Author
2229	Increased macrophage activation marker soluble CD163 is associated with graft dysfunction and metabolic derangements in renal transplant recipients	**Hayam El Aggan** Faculty of Medicine, Alexandria University, Egypt
2236	Clinical significance of soluble ST2 for the evaluation of volume status in kidney transplant recipients	**Woo-yeong Park** Keimyung University Dongsan Hospital, Korea
2279	Association of Vascular Endothelial Growth Factor gene polymorphism with Allograft Survival in Renal Transplant Recipients	**Narayan Prasad** Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India
2289	Phosphodiesterase-5/5-HT2B dual inhibitors abrogate completely fibrotic potential of human renal fibroblasts isolated from renal allograft rejection patients	**Akhilesh Jaiswal** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
2311	Opening a Pandora's box	**Shiva Kumar Ammayappan** Madurai medical college, India
2327	Case Report : Post Transplant Erythrocytosis (PTE)	**Stefany Adi Wahyuningrum** Sanglah hospital, Udayana university, Indonesia
2383	Comparison of the Impact between Peak MFI versus Sum of MFI Value of Donor Specific Anti-HLA Antibody on the Post-transplant Clinical Outcomes	**Hyung Duk Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2385	Changing Patterns of T Lymphocyte Subsets after Kidney Transplantation according to Induction Immunosuppressant: Single Center Prospective Observational Study	**Hyung Duk Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2424	Modifiable risk factors for new-onset hypertension after live kidney donation	**Yaerim Kim** Keimyung University, Korea
2456	Renal & Obstetric outcomes of kidney transplantation recipients Versus CKD stage 4, 5 patients	**Suyeon Hong** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2470	Low early post-transplant tacrolimus level within 1 month is associated with poor renal allograft survival in kidney transplant patients	**Jung Hwa Ryu** Ewha Womans University, Korea
2483	Changes in physical, emotional, and socioeconomic status in living kidney donors	**Yaerim Kim** Keimyung University School, Korea

Transplantation

Abstract No.	Title	Presenting Author
2492	Hemorrhagic cholecystitis with hemobilia during oral edoxaban therapy in a patient with kidney transplant	**Tae Hyun Ryu** Bong Seng Memorial Hospital, Korea
2521	Association of Pre-Kidney Donation Diastolic Hypertension with Early and Late Kidney Allograft Function: Time-Dependent Effect Analysis	**Ekamol Tantisattamo** University of California Irvine, United States
2548	Parathyroidectomy versus cinacalcet in the treatment of tertiary hyperparathyroidism after kidney transplantation – retrospective study	**Suyun Jung** Asan Medical Center, University of Ulsan, Korea
2577	EVALUATING ALLOGRAFT RENAL FUNCTION BY CYSTATIN C ESTIMATED GLOMERULAR FILTRATION RATE EQUATIONS	**Thanh-Tam Tran-Thai** Can Tho University of Medicine and Pharmacy, Vietnam
2587	Analysis of 300 ABO incompatible kidney transplantations in a single center	**Eun Jeong Ko** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
2596	Light chain deposition disease in kidney transplant patient	**Byung Chul Shin** Chosun University Hospital, Korea
2599	The Efforts of Health Workers on Kidney Transplantation Patients During The Covid-19 Pandemic: Literature Review	**Putri Ayu** Andalas University, Indonesia

Non-dialysis CKD

Abstract No.	Title	Presenting Author
2045	Interaction of high sodium intake and central obesity on albuminuria in general population	**Susie Hong** Hanyang University Medical Center, Korea
2061	Indoxyl sulfate is more inportant predictor for sarcopenia than myostatin in patients with chronic kidney disease: post-hoc analysis from RECOVERY study	**Hyo Jeong Park** Dong-A University Hospital, Korea
2062	Kidney Injury Risk and Elevated Blood Pressure in Young Adults	**Songuk Yoon** Gangnam Severance Hospital, Korea
2077	Urine potassium excretion, blood pressure variability, and cardiovascular outcomes in CKD	**Sang Heon Suh** Chonnam National University Hospital, Korea
2098	Effects of Air Pollutants on Mortality of Patients with Chronic Kidney Disease Living in Green Spaces in Seoul, Korea: A Large Observational Study	**Jiyung Jung** Dongguk University Ilsan Hospital, Korea
2110	The association between metabolic acidosis and bone mineral density in pre-dialysis chronic kidney disease: results from the KNOW-CKD cohort	**Eunjeong Kang** Ewha Womans University Medical Center, Korea
2114	Relationship between cholesterol intake and development of chronic kidney disease: a community-based prospective cohort study	**Joonbyung Park** Soonchunhyang University Seoul Hospital, Mongolia
2118	Association between body mass index and hemoglobin level with disease severity of chronic kidney disease undetermined etiology in Sri Lanka	**HG Naduni Erandika** Centre for Research, Sri Lanka
2141	Late stage 3 chronic kidney disease is an independent risk factor for sarcopenia, but not proteinuria	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
2142	Serum cystatin C to creatinine ratio is a potential biomarker for sarcopenia in patients with non-dialysis-dependent chronic kidney disease	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
2145	Low magnesium is associated with a weak bone strength in pre-dialysis CKD patients: Results from the KNOW-CKD study	**Minjung Kang** Seoul National University Hospital, Korea
2152	Liver fibrosis assessed by transient elastography is associated with chronic kidney disease and diabetes	**Nam Ju Heo** Seoul National University Hospital, Korea
2160	Effect of Pitavastatin on Erythrocyte Membrane Fatty Acid Contents and HbA1C in Patients with Chronic Kidney Disease	**Minju Kim** Dong-A University Hospital, Korea
2174	Comparison of incidence of acute kidney injury, chronic kidney disease and end-stage renal disease between atrial fibrillation and atrial flutter: real-world evidences from a propensity score-matched national cohort analysis	**Wei Syun Hu** China Medical University Hospital, Taiwan

Non-dialysis CKD

Abstract No.	Title	Presenting Author
2178	Temporal changes of cellular senescence in post-acute kidney following ischemia-reperfusion	**Seo Rin Kim** Pusan National University Yangsan Hospital, Korea
2192	Elevated Insulin Resistance Predicts Renal Hyperfiltration in Young Adults.	**Donghwan Oh** Gangnam Severance Hospital, Korea
2196	Effect of orthostatic hypotension on kidney function	**Jin Hee Na** Samsung Changwon Hospital, Korea
2219	A Case of Chronic unilateral hematuria Treated with Segmental renal artery embolization.	**Hansae Kim** Q hospital, Korea
2220	Systemic Immune-inflammation Index (SII) as Predictor of Mortality in Kidney Disease Patients with COVID 19 Infection	**Indrayana Sunarso** Sebelas Maret University, indonesia, Indonesia
2234	The association of transferrin saturation (TSAT) with renal progression in non-dialysis chronic kidney disease (NDCKD): Results from KNOW-CKD study	**Ji Young Ryu** Seoul National University Bundang Hospital, Korea
2235	Disturbance of circadian rhythm and CKD in Korean Adult population	**Yina Fang** Korea University Anam Hospital, Korea
2245	Advanced liver fibrosis predicts chronic kidney disease development in patients with nonalcoholic fatty liver disease	**Chan-Young Jung** Severance Hospital, Korea
2248	1,25-dihydroxyvitamin D deficiency is an independent predictor of cardiac valve calcification in patients with chronic kidney disease	**Suji Kim** Pusan National University Yangsan Hospital, Korea
2265	Association between frailty, cognitive impairment, and nutrition in chronic kidney disease	**Seongmin Kim** Gyeongsang National University Changwon Hospital, Korea
2276	The association between residential greenness and mortality of CKD patients: evaluating mediation effects of air pollution	**Jiyung Jung** Dongguk University Ilsan Hospital, Korea
2319	Soluble transferrin receptor can predict all-cause mortality regardless of anemia and iron storage: Results from the National Health and Nutrition Examination Survey, 2003 to 2010	**Minjung Kang** Seoul National University Hospital, Korea
2323	Albuminuria within the normal range can predict all-cause mortality and cardiovascular mortality: Results from the National Health and Nutrition Examination Survey, 1999 to 2016	**Minjung Kang** Seoul National University Hospital, Korea
2338	The increased urine levels of growth differentiation factor15 in Korean patients with diabetic chronic kidney disease	**Won Kim** Chonbuk National University, Korea

Non-dialysis CKD

Abstract No.	Title	Presenting Author
2351	Baseline renal function and the decline of health-related quality of life in chronic kidney disease: form the KNOW-CKD study	**Sang-Eun Kim** Kangbuk Samsung Hospital, Korea
2379	Association with albuminuria and periodontitis and its effects on mortality	**Mi Yeun Han** Hangang Sacred Heart Hospital, Korea
2381	Association factors with Gait speed in predialysis chronic kidney disease patients: Result from RECOVERY study	**Mi Yeun Han** Hangang Sacred Heart Hospital, Korea
2402	Small changes in eGFR are associated with different patterns of 24-h ambulatory blood pressure monitoring in general population	**Sang Gon Yoon** Inje University Ilsan Paik Hospital, Korea
2406	Potential biomarkers of vascular calcification in ferroptosis-related chronic kidney disease	**Yun Tang** University of Electronic Science and Technology of China, China
2427	Impact of dietary beta-carotene on all-cause mortality according to the different clinical condition including decreased kidney function	**Yaerim Kim** Keimyung University, Korea
2447	Protective Effect of Heparan Sulphate Derivative against Glycocalyx Damage-induced Renal Fibrosis in Aging Mice	**Tae Hyun Ban** The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea
2499	The predictability of foamy urine to proteinuria; and its long-term observation	**Woojin Jang** Seoul Veterans Hospital, Korea
2551	Long-term protective effect of Fimasartan and Losartan in patients with hypertensive diabetic chronic kidney disease: A multi-center, open, retrospective observational study	**Hyo Jeong Kim** Severance Hospital, Korea
2555	Health-enhancing physical activity improves the quality of life in non-dialysis-chronic kidney disease patient from KNOW-CKD study	**Tae Ryom Oh** Chonnam National University Hospital, Korea
2556	The association between serum osteoprotegerin and renal prognosis in non-dialytic chronic kidney disease from the KNOW-CKD Study	**Tae Ryom Oh** Chonnam National University Hospital, Korea
2558	Utility of whole exome sequencing in evaluation of genetic causes of adult chronic kidney disease of unknown origin	**Ji Hye Kim** Seoul National University Hospital, Korea
2572	Presence of chronic kidney disease affects severe clinical outcome in the hospitalized patients with COVID-19 infection	**Hayne Cho Park** Kangnam Sacred Heart Hospital, Korea
2573	Effect of Renamezin® upon attenuation of renal function decline in pre-dialysis chronic kidney disease patients: 24-week prospective observational cohort study	**Hayne Cho Park** Kangnam Sacred Heart Hospital, Korea

Big Data

Abstract No.	Title	Presenting Author
1006	The Role of Transient Potassium Channels in Ureter Smooth Muscle Action Potential and excitability: A Computational Study	**Chitaranjan Mahapatra** University of California San Francisco, United States
1008	CKD Prevalence in Sulawesi Island, Indonesia: Basic Health Research (2013-2018)	**Destriyani Destriyani** Pambusuang primary health center, Polewali Mandar, West Sulawesi, Indonesia, Indonesia
2063	Association between behavior patterns and mortality among US adults: National Health and Nutrition Examination Survey, 2007–2014	**Yuna Chung** Dongguk University Ilsan Hospital, Korea
2093	Fracture Site and Incidence According to Kidney Replacement Therapy	**Inwhee Park** Ajou University, Korea
2108	Transient trace dip-stick albuminuria is associated with all-cause death, cardiovascular death, and incident chronic kidney disease	**Samel Park** Soonchunhyang University Cheonan Hospital, Korea
2139	The association of sodium intake and albuminuria according to cotinine-verified smoking status: Korean National Health Examination Survey (KoNHES)	**Young-Bin Son** Korea University Anam Hospital, Korea
2175	Comparison of CHA2DS2-VASc and C2HEST scores for predicting the incidence of atrial fibrillation among patients with end-stage renal disease	**Wei Syun Hu** China Medical University Hospital, Taiwan
2275	Effects of Air Pollution on Mortality of Patients with Chronic Kidney Disease in Seoul, Korea: A Large Observational Cohort Study	**Jiyung Jung** Dongguk University Ilsan Hospital, Korea
2365	Mental illness in patients with end-stage kidney disease in South Korea: a nationwide cohort study	**Min-Jeong Lee** Ajou University, Korea
2370	Appropriate physical activity protects renal function decline and increases survival rate in the elderly population: A nationwide analysis of the National Health Insurance Service Senior Cohort	**Hyunsuk Kim** Chuncheon Sacred Heart Hospital, Korea
2376	Cumulative exposure of metabolic syndrome components and the risk of end-stage renal disease in the general population: a nationwide cohort study	**Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea
2377	Underweight and the risk of end-stage renal disease in the general population: a nationwide cohort study	**Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea

Big Data

Abstract No.	Title	Presenting Author
2420	Achievement of blood pressure target and risk of MACCE in patients with metabolic syndrome	**Ji Min Lim** Keimyung University Dongsan Medical Center, Korea
2434	Impact of blood pressure control on the development of ESKD in according to the presence of metabolic syndrome	**Jungheon Kwon** Keimyung University Dongsan Medical Center, Korea
2536	Use of Deep Learning to Predict Acute Kidney Injury after Intravenous Contrast Media Administration	**Donghwan Yun** Seoul National University Hospital, India
2571	Machine Learning Models for Predicting Intradialytic Hypotension	**Hyung Woo Kim** Severance Hospital, Korea

Geriatric Nephrology

Abstract No.	Title	Presenting Author
2057	Renal sinus and abdominal periaortic fat attenuation indices measured on computed tomography are associated with metabolic syndrome	**Nayoung Song** Soonchunhyang University Seoul Hospital, Korea
2324	Myostatin/appendicular skeletal muscle mass(ASM) ratio, not myostatin, may be a marker of low handgrip strength in the community dwelling older women	**Soo Jeong Choi** Soonchunhyang University Bucheon Hospital, Korea

Others

Abstract No.	Title	Presenting Author
2021	Biological importance and therapeutic benefit of sciadopitysin on osteoclastogenesis: Therapeutic role in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
2140	Impact of Covid-19 pandemic in the critically ill patients without Covid-19 infection	**Harin Rhee** Pusan National University Hospital, Korea
2277	Effects of air pollution on body composition in Korea	**Jiyung Jung** Dongguk University Ilsan Hospital, Korea
2534	Technology and medical care in India: Growth of telehealth awareness during the COVID-19 pandemic	**Arunkumar Subbiah** AIIMS, New Delhi, India
2570	Anti-inflammatory effects of liraglutide by ectodomain shedding of RAGE in human aortic endothelial cells	**Chung Hee Baek** Asan Medical Center, University of Ulsan, Korea

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2. 2019 3Q MAT, IQVIA DATA 기준(국내 고칼륨혈증 치료제 판매량)

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[효능 · 효과] 고칼륨혈증 **[용법 · 용량]** 1. 경구투여 성인: 폴리스티렌설폰산칼슘으로서 1일 15~30g을 2~3회로 분할하고 1회량을 물 30~ 50mL에 현탁하여 경구투여한다. 2. 직장투여 성인: 1회 30g(산) 또는 30.15g(과립)을 물 또는 2% 메틸셀룰로오스용액 100mL에 현탁하여 직장에 투여한다. 현탁액을 체온정도로 가온하고 30분~1시간 장관내 방치한다. 액이 누출되는 경우에는 베개로 둔부를 올려주거나 잠시동안 슬흉위 사이를 집어준다. 물 또는 2% 메틸셀룰로오스 대신 5% 포도당용액을 사용할 수 있다. 연령, 증상에 따라 적절히 증감한다. **[사용상의 주의사항]** 1. 다음 환자에는 투여하지말 것 : 1) 고칼슘혈증 환자 2) 부갑상선기능항진증 환자 (이온교환으로 혈중칼슘농도가 상승할 수 있다) 3) 다발성 골수종 환자 (이온교환으로 혈중칼슘농도가 상승할 수 있다) 4) 사르코이드증 또는 전이성 암종 환자 5) 폐색성 장질환 환자(장관천공이 나타날 수 있다.) 6) 1개월 미만의 신생아 (경구투여에 한함) 7) 수술이나 약물 투여로 소화관 운동이 저하된 신생아 (직장투여에 한함) 2. 이상반응 : 이 약에 대한 임상시험 및 시판 후 안전성 조사결과, 총 1,182에 경구투여시 151명(12.8%)에서 159건의 이상반응이 보고되었다. 이 중 가장 많이 보고된 이상반응은 변비(109건, 9.2%), 식욕부진(18건, 1.5%), 구역(16건, 1.4%), 저칼륨혈증 (13건, 1.1%) 등이었다. 3. 적용상의 주의 • 경구투여 관련 1) 이 약의 소르비톨 현탁액 경구투여시 결장협착, 결장궤양 등이 보고되었다. 2) 이 약의 유사 약물(폴리스티렌설폰산나트륨)의 소르비톨 현탁액 경구투여시 소장내 천공, 장점막 괴사, 소장종양과 결장괴사 등이 보고되었다. 3) 이 약 경구투여시 소화관에서의 축적을 피하기 위해 변비가 발생하지 않도록 주의한다. • 직장투여 관련 4) 동물실험(랫트)에서 소르비톨의 직장투여에 의해 장벽괴사가 보고되었으며, 폴리스티렌설폰산형 양이온의 소르비톨 현탁액을 직장투여한 경우에도 결장괴사가 보고되었다. 따라서, 이 약을 직장투여하는 경우에는 소르비톨 용액을 사용하지 않도록 한다. 5) 이 약 투여 후 장관에 잔류되지 않도록 충분히 제거하여야 한다. 특히 정상적인 배설이 곤란한 환자인 경우 다른 적절한 방법을 이용하여 이 약을 장관에서 배설시킨다. [포장단위] 100포 **[저장방법 및 사용기간]** • 기밀용기, 실온(1~30℃)보관 • 사용기간: 산제/제조일로부터 60개월(5년), 과립제/제조일로부터 36개월(3년)

카리메트 현탁액

[효능 · 효과] 고칼륨혈증 **[용법 · 용량]** 성인: 1일 3~6포(폴리스티렌설폰산칼슘으로서 15~30g)을 2~3회로 나누어 경구 투여한다. **[사용상의 주의사항]** 1. 다음 환자에는 투여하지 말 것. 1) 고칼슘혈증 환자 2) 부갑상선기능항진증 환자(이온교환으로 혈중칼슘농도가 상승할 수 있다) 3) 다발성 골수종 환자(이온교환으로 혈중칼슘농도가 상승할 수 있다) 4) 사르코이드증 또는 전이성 암종 환자 5) 폐색성 장질환 환자(장관천공이 나타날 수 있다) 6) 1개월 미만의 신생아 (중력) 3. 이상반응 : 이 약에 대한 임상시험 및 시판 후 안전성 조사결과, 총 1,182에 경구투여시 151명(12.8%)에서 159건의 이상반응이 보고되었다. 이 중 가장 많이 보고된 이상반응은 변비(109건, 9.2%), 식욕부진(18건, 1.5%), 구역(16건, 1.4%), 저칼륨혈증 (13건, 1.1%) 등이었다. (중략) 9. 적용상의 주의 1) 이 약은 경구로만 투여한다. 2) 이 약의 유사 약물(폴리스티렌설폰산나트륨)의 소르비톨 현탁액 경구투여시 소장내 천공, 장점막 괴사, 소장종양과 결장괴사 등이 보고되었다. 3) 이 약 경구투여시 소화관에서의 축적을 피하기 위해 변비가 발생하지 않도록 주의한다. 4) 이 약과 알긴산나트륨과의 병용투여로 소화관 내 불용성 겔이 발생하였다는 보고가 있다. [포장단위] 100포 **[저장방법 및 사용기간]** 기밀용기, 실온(1~30℃)보관 제조일로부터 36개월(3년)

수입자 (카리메트현탁액)

Kowa

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판매자 (카리메트산/과립/현탁액)

Alvogen

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Reference 1. William B, White, et al. Effects of the Angiotensin Receptor Blocker Azilsartan Medoxomil Versus Olmesartan and Valsartan on Ambulatory and Clinic Blood Pressure in Patients With Stages 1 and 2 Hypertension. Hypertension 2011;57:413~420.

Prescribing Information [제품명] 이달비정40밀리그램(아질사르탄 메독소밀칼륨) / 이달비정80밀리그램(아질사르탄 메독소밀칼륨) **[유효성분]** 아질사르탄 메독소밀칼륨 42.68mg (아질사르탄 메독소밀로서 40mg) 아질사르탄 메독소밀칼륨 85.36mg (아질사르탄 메독소밀로서 80mg) **[효능·효과]** 본태성 고혈압 **[용법·용량]** 성인 : 이 약의 권장 초회용량은 1일 1회 40밀리그램이며 식사와 관계없이 투여한다. 이 용량에서 혈압이 적절히 조절되지 않는 경우 1일 최대 80밀리그램까지 증량할 수 있다. 혈압강하 효과는 치료시작 후 2주 이내에 나타나며 약 4주 정도에 최대효과가 나타난다. 이 약 단독 투여로 혈압이 조절되지 않는 경우 다른 혈압강하제이뇨제와 클로르탈리돈, 히드로클로로티아지드나 칼슘채널차단제와 병용투여 시 추가적인 혈압강하효과가 나타날 수 있다. **[사용상의 주의사항] 1. 경고** 1) 임신 2, 3기인 임부에게는 안지오텐신-Ⅱ(Renin-Angiotensin System, RAS)에 직접적으로 작용하는 약물 투여 시 태아 및 신생아에게 손상 및 사망까지 유발할 수 있다. 따라서 만일 임신으로 확인될 경우 즉시 이 약의 투여를 중단해야 한다. **2. 다음 환자에는 투여하지 말 것** 1) 이 약 또는 이 약에 함유된 성분에 대하여 과민증이 있는 환자 2) 임부 3) 다음의 환자에게 이 약과 알리스키렌 제제의 병용투여: 당뇨병 환자 또는 중등증-중증의 신장애사구체여과율<60mL/min/1.73m²환자 **[저장방법]** 차광기밀용기, 실온(1~30℃)보관, 습기를 피하여 보관
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References 1. Renvela [package insert]. Cambridge, MA: Genzyme Corp. 2016 **2.** Rodríguez-Osorio L, et al. Nefrologia. 2015;35(2):207-217. **3.** Di Iorio B, et al. Am J Kidney Dis 2013;62:771-778. **4.** 식품의약품안전처. 렌벨라 허가정보. nedrug.mfds.go.kr Accessed 16 Mar 2020 **5.** Connor et al J Polym. Sci. Part A: Polym. Chem. 2017; 55. 3146-3157

렌벨라®정(세벨라머탄산염) 렌벨라®산0.8그램(세벨라머탄산염) [원료약품 및 그 분량] 렌벨라정 1정 중 세벨라머탄산염(별규) 800.0mg, 렌벨라산 1포 중 세벨라머탄산염 (별규) 800mg **[효능·효과]** 투석을 받고 있는 만성 신장질환 환자의 혈청인 조절 **[용법·용량]** 1일 3회 식사와 함께 복용. 산제 복용시 이 약 1포는 최소 30mL의 물로 완전히 혼합하여 30분 이내에 복용하고, 복용 전에 재현탁한다. 1) 인산결합제를 복용하고 있지 않는 환자에 투여: 이 약의 권장초기용량은 0.8g 내지 1.6g 이며, 이 약 1~2정(포)을 다음과 같이 혈청 인 수치에 따라 매 식사와 함께 복용한다. 혈청 인 5.5 - 7.5 ㎎/dL의 경우 1회 1정(포), 1일 3회, 7.5 ㎎/dL이상의 경우 1회 2정(포), 1일 3회. 2) 세벨라머 염산염 정제를 복용하고 있는 환자에서 이 약을 대체 투여: 동일 용량을 투여한다. 투석을 받는 만성신장질환 환자에서 연구된 세벨라머 탄산염의 최대 1일 용량은 14g이었다. 3) 세벨라머 탄산염의 정제에서 산제로 또는 산제에서 정제로 대체투여: 동일 용량을 투여한다. 4) 초산칼슘제제를 복용하고 있는 환자에게 이 약을 대체 투여하는 경우 초산칼슘제제 (1정당 초산칼슘 667mg) 1회 1정, 1일 3회 시 이 약 1회 1정(포) 1일 3회, 초산칼슘제제 1회 2정,1일 3회 시 이 약 2정(포) 1회, 1일 3회, 초산칼슘제제 1회3정, 1일 3회 시 이 약 1회 3정(포), 1일 3회 5) 이 약을 복용하고 있는 모든 환자에서의 용량 조절 목표 혈청 인 수치에 도달하기 위해 적절한 용량 조절이 필요할 수 있다. 필요 시 2주 간격을 두고 1일 3회 이 약의 용량을 0.8g씩 증량 또는 감량한다. **[사용상의 주의사항] [금기]** 이 약의 주성분 및 부형제에 과민한 환자, 저인산혈증 환자, 장폐색 환자 (이 약은 장관내에서 팽윤하여 장관천공을 일으킬 우려가 있다.**[신중투여]** 장관협착 또는 변비가 있는 환자 **[이상반응]** - 혈액투석환자 대상으로 한 연구에서 세벨라머 탄산염 정제의 이상반응과 세벨라머 염산염에서 보고된 이상반응이 유사하였다. 혈액투석환자를 대상으로 한 또 다른 교차연구에서 세벨라머 탄산염 산제의 이상반응과 세벨라머 염산염에서 보고된 이상반응이 유사하였다. - 세벨라머 염산염 연구에서, 세벨라머 염산염으로 치료받은 환자(n=99)의 5% 이상에서 발생한 이상반응 : 구토(22%), 구역(20%), 설사(19%), 소화불량(16%), 복통(9%), 고창(8%), 변비(8%) - 복막투석환자 대상으로 한 세벨라머 염산염 연구에서 대부분의 이상반응은 혈액투석 환자에서 관찰된 이상반응과 유사하였다. - 세벨라머 탄산염 및 세벨라머 염산염의 시판 후 확인된 이상반응 : 과민반응, 가려움증, 발진, 복통, 대변 막힘, 흔하지 않은 케이스로 장폐색증과 장폐쇄증, 장관천공. 변비증상이 나타나거나 기존의 변비증상이 심해진 환자는 중증의 합병증을 피하기 위해 적절한 의료처치가 필요하다.

※ 보다 자세한 내용은 홈페이지나 제품설명서를 참고하시기 바랍니다. [문안개정연월일] 2019.06.03.

(주)사노피-아벤티스 코리아 서울특별시 서초구 반포대로 235 (반포동) Tel .02)2136-9000 Fax. 02)2136-9099

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once every 2 weeks[1]

Reference 1. 파브라자임®35밀리그램(아갈시다제베타) 국내 제품설명서(2020.06.02).

파브라자임®주35밀리그램(아갈시다제베타) [효능·효과] 파브리병(α-galactosidase A 결핍)으로 확진된 환자의 장기간 효소대체요법 **[용법·용량]** 이 약의 권장량은 체중 Kg당 1mg을 정맥 주입으로 2주에 1회씩 투여. 환자는 약의 주입 전에 해열제를 투여받아야 함. 초기 주입속도는 0.25mg/min(15mg/hour) 이상을 넘어서는 안됨. 주입 반응이 나타날 경우 주입속도를 늘출 수 있음. 환자의 내약성이 생긴 후 주입 속도는 점차로 증대될 수 있음. 각각의 차후 주입 시 0.05~0.08mg/min(3~5mg/hr)만큼씩 주입 속도를 증가시킬 수 있음. '용액 제조 방법'은 상세 제품정보를 참조한다. **[사용상의 주의사항] 경고** 1) 아나필락시스 반응 및 알러지 반응 : 이 약 주입 중 생명을 위협하는 중대한 알러지 반응과 아나필락시스 반응이 관찰되었음 2) 주입반응 : 이 약에 대한 임상시험에서 이 약으로 치료받은 환자 중 약 50-55%에서 주입반응이 나타났으며 일부 반응은 중증이었음. 3) 심장기능 손상 : 파브리병이 진행된 환자는 심장기능이 손상될 수 있으며, 이는 주입반응으로 인하여 환자를 위험성이 더 큰 중대한 합병증에 취약하게 만들 수 있음. 4) 면역반응과 재투여 : 이 약에 대한 임상시험에서 소수의 환자가 이 약에 특이적으로 반응이 나타나는 피부반응 또는 IgE 항체를 발현하였음. 급기 주성분이나 부형제에 생명을 위협할만한 아나필락시스 반응(Anaphylactic reaction)을 나타내는 환자 **이상사례** 1) 임상시험 중 이상사례 : 임상시험 중 이 약의 치료와 관련하여 보고된 가장 중대한 이상사례는 아나필락시스 반응과 알러지반응이었음. 이 약의 가장 흔한 이상사례는 주입반응이었으며 이 중 일부는 중증하반응이었음. 중대한 및/또는 빈번히 발생하는 (5% 이상의 발생률) 이상사례는 다음에 나열된 증상들이 한 가지 또는 그 이상 결합되어 나타남 : 오한, 발열, 냉열감, 호흡곤란, 구역, 홍조, 두통, 구토, 감각이상, 피로, 가려움증, 사지둔통, 고혈압, 홍통, 인후경직, 복통, 어지러움, 빈맥, 비충혈, 설사, 점조부종, 근육통, 오통, 창백, 서맥, 두드러기, 저혈압, 얼굴부종, 발진, 출음증은 출음증은 이 시험이 항히스타민제로 전처치한 임상시험이기 때문에 나타날 수 있음. 중재가 필요한 대부분의 주입관련반응은 주입속도를 늦추거나 일시적으로 주입을 중지하거나/하고 해열제, 항히스타민제 또는 스테로이드제제를 투여함으로써 개선됨. 보고된 또 다른 중대한 이상사례에는 뇌졸중, 통증, 운동실조증, 서맥, 심장부정맥, 심장정지, 심박출감소, 현기증, 청각저하증과 신증후군이 있음. 2)면역원성: 임상 시험 중 이 약으로 치료받은 121명의 성인환자 중 95명(79%), 16명의 소아환자 중 11명(69%)에게서 젠자임파브라자임 IgG 항체가 발현되었음. IgG 항체가 발현된 대부분의 환자들은 노출 후 초기 3개월 이내에 나타난 것임. 이 약에 대한 억제항체 및/또는 결합항체의 임상적 유의성은 알려진 바 없음. 다른 모든 치료단백질과 마찬가지로 면역원성에 대한 잠재성이 있음. 3) 시판 후 조사: 임상시험 중 이상사례 항에 보고된 이상사례 이외에, 다음의 이상사례는 아갈시다제 베타의 시판 후 사용기간 동안 보고되었음. 관절통, 무력증, 홍반, 다한증, 주입부위반응, 눈물흘림 증가, 백혈구 파괴성 맥관염, 림프절병, 감각저하, 구강 감각저하, 심계 항진, 콧물, 산소포화도 감소, 저산소증, 막사구체신염 ※보다 자세한 내용은 홈페이지(www.sanofi.co.kr)나 제품설명서를 참고하시기 바랍니다. **최종문안개정연월일:** 2020.06.02

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- INSIGHT study를 통해, 1일 1회 복용으로 24시간 일정하고 안정된 혈압조절 효과 입증[1]
- ACTION study를 통해 ,안정형 협심증을 동반한 고혈압 환자에서 장기간(>5년) 혈압강하 효과 입증[2]
- 한국 환자*를 대상으로 실시한 FOCUS study를 통해, 단독 및 병용 요법 모두에서 우수한 혈압조절 효과 입증[3]

*저용량 항고혈압제 단독요법으로 혈압조절이 어려운 고혈압 환자

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[제품명] 아달라트오로스정 30/60 **[주성분]** 니페디핀(미분화) 33mg/66mg **[효능·효과 / 용법·용량]** 1.관동맥심질환(만성안정형협심증) 2.고혈압 처음에는 30mg 또는 60mg을 하루 한번씩 통상 7-14일간 투여하면서 환자의 상태에 따라 용량을 조절한다. 고혈압: 치료 시작시에 20mg이나 30mg을 권장한다. 약물의 혈중 농도가 둘째날부터 안정상태에 도달하므로 환자의 상황을 자주 측정하여 적정기간을 단축할 수 있다. 최고 120mg을 초과하지 않도록 한다. 반드시 환자의 증상에 따라서 조절되어야 한다. 삼투압 원리의 약물방출기전(오로스제형)을 이용하는 이 약의 투여는 식사와 무관하게 할 수 있다(공복시 또는 식사후의 이 약의 흡수에 차이는 없다). **[사용상의 주의사항] 1. 다음 환자에는 투여하지 말 것** 1) 이 약에 과민증의 병력이 있는 환자 2) 임부 또는 임신하고 있을 가능성이 있는 부인, 수유부 3) 심인성 쇽 환자 4) 불안정형 협심증 환자 (심근허혈을 증가시킬 수 있으며 좌심부전을 일으킬 수 있다.)(단, 제품의 효능·효과가 "협심증" 및 "휴식시의 협심증"에 해당되는 제제인 경우 제외) 5) 저혈압 (수축기압 90mmHg 미만) 환자 6) 중증의 대동맥판협착증 환자 7) 리팜피신을 투여받고 있는 환자(리팜피신과 병용시에는 효소 작용으로 인해 이약의 적절한 혈중 농도를 얻지 못할 수 있다) 8) 급성 심근경색 (8일 이내) 환자 (급격한 혈행동태의 변화로 병태가 악화될 수 있다.) 9) 직장절제수술 후 회장조루술을 받은 콕낭(Kock pouch)환자 **2. 주요 이상반응** 1) 간장 : 때때로 AST, ALT, ALP 상승등 간기능 검사치이상, 2) 비뇨기계 : 때때로 BUN 상승 3) 순환기계 : 때때로 흉통, 허혈성 동통 (특히 치료 초기나 용량증가시), 심근경색, 때때로 안면홍조, 열감, 심계항진, 혈압강하, 기립성 저혈압, 하지부종, 말초부종, 저혈압, 혈관확장 4) 정신신경계 : 때때로 두중, 두통, 어지러움, 권태감, 신경쇠약, 감각이상, 불쾌감 5) 소화기계 : 때때로 구역, 구토, 변비, 소화불량 6) 과민증 : 때때로 발진, 가려움 7) 피부 : 홍피증 (박리성피부염) 8) 골격근 : 때때로 하지경련 9) 구강 : 연용에 의해 치은비후 10) 전신 : 때때로 불편감, 부종, 복통, 하지통, 동통 11) 호흡기계 : 때때로 호흡곤란 **[전문의약품] [수입 및 판매자]** 바이엘코리아㈜ **[개정년월일]** 2019.07.11 **보다 자세한 사항은 제품설명서 전문 또는 바이엘 웹사이트, http://www.bayer.co.kr/를 참고하시기 바랍니다.**

Reference 1. Mancia G, Omboni S, Parati G; Investigators of the INSIGHT ABPM substudy, Twenty-four hour ambulatory blood pressure in the International Nifedipine GITS Study Intervention as a Goal in Hypertension Treatment (INSIGHT). *J Hypertens* 2002 Mar;20(3):545-53 2. Lubsen J, Wagener G, Kirwan BA et al. Effect of long-acting nifedipine on mortality and cardiovascular morbidity in patients with symptomatic stable angina and hypertension: the ACTION trial. *J Hypertens* 2005 Mar;23(3):641-8 3.Park JB, Ha JW, Jung HO, Rhee MY; FOCUS investigators, Randomized trial comparing the effects of a low-dose combination of nifedipine GITS and valsartan versus high-dose monotherapy on central hemodynamics in patients with inadequately controlled hypertension: FOCUS study, Blood Press *Monit* 2014 Oct;19(5):294-301

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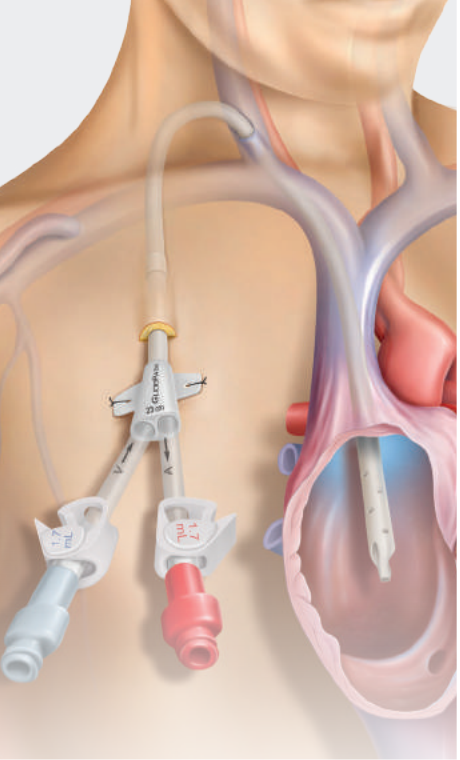

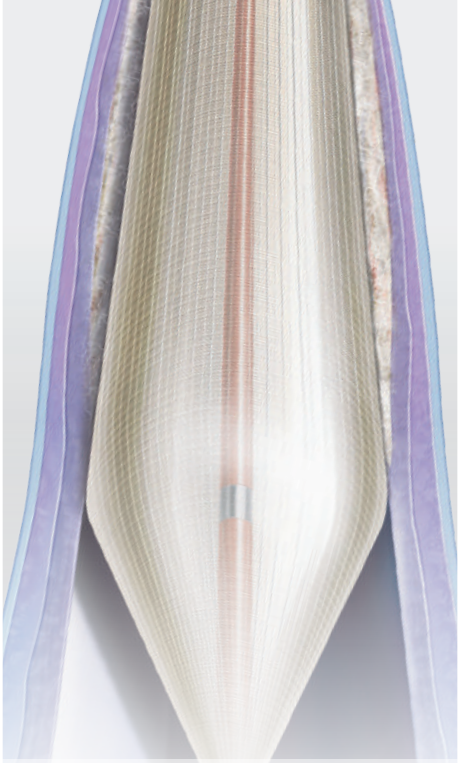

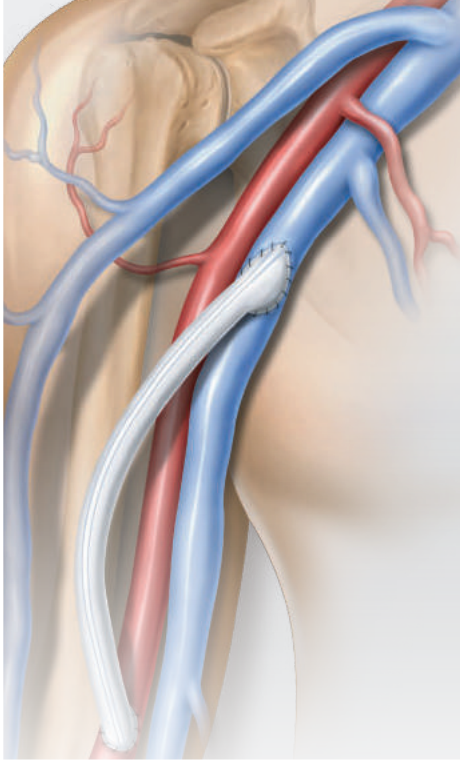

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References. **1**. Nedogoda SV, et al. *Clin Drug Investig.* 2013 Aug;33(8):553-61. **2.** Ferrari R, et al. *Expert Rev Cardiovasc Ther.* 2013 Jun;11(6):705-17. **3.** Fox KM, et al; EUROPA Investigators. *Lancet.* 2003 Sep 6;362(9386):782-8.

ACERTIL ARGININE TAB 5MG, 10MG ABRIDGED PRODUCT INFORMATION

[COMPOSITION] ACERTIL ARGININE 5mg, 10mg film-coated tablets contain 5mg and 10mg perindopril arginine. Contains lactose as excipient. **[DESCRIPTION]** ACERTIL ARGININE TAB. 5mg: Light-green, rod-shaped film-coated tablet engraved with the company logo on one face. ACERTIL ARGININE TAB. 10mg: Green, round, biconvex, film-coated tablet engraved with 10 on one face and the company logo on the other face. **[INDICATIONS/DOSAGE AND ADMINISTRATION]** It is recommended to take this drug once daily in the morning before meal. **1. Hypertension** - Adults: 5mg taken once daily. The dose may be increased to 10mg once daily after one month of treatment. - Patients with a strongly activated renin-angiotensin-aldosterone system (RAAS): starting dose of 2.5 mg is recommended. - Elderly: treatment should be initiated at a dose of 2.5 mg, once daily which may be progressively increased to 5 mg after one month. - Renal impairment: Clcr ≥ 60 ml/min: 5 mg/day; 30 < Clcr < 60 ml/min: 2.5 mg/day; 15 < Clcr < 30 ml/min: 2.5 mg every other day; Haemodialysed patients: Clcr < 15 ml/min: 2.5 mg on the day of dialysis. **2. Congestive Heart failure** (adjuvant treatment with non-potassium sparing diuretics and digitalis treatment): - Adults: starting dose of 2.5mg once daily. Depending on tolerance, this dose may be increased after 2 weeks, to 5mg daily. - Severe congestive heart failure patients, elderly patients, patients having very low initial arterial blood pressure, patients with renal insufficiency, and patients receiving treatment with high dosage diuretic: should be initiated at a dose of 1.25mg once daily under careful supervision. **3. Stable Coronary Artery Disease** (reduction of the risk of cardiovascular mortality or non-fatal myocardial infarction in patients with a history of myocardial infarction and/or revascularization): - Adults: 5 mg once daily for two weeks, then increased to 10 mg once daily, depending on renal function and whether the 5 mg dose is well tolerated. - Elderly: 2.5mg once daily for one week, then 5 mg once daily the next week, before increasing the dose to 10 mg once daily depending on renal function and if the previous dose is well tolerated. - Renal impairment: Clcr ≥ 60 ml/min: 5 mg/day; 30 < Clcr < 60 ml/min: 2.5 mg/day; 15 < Clcr < 30 ml/min: 2.5 mg every other day; Haemodialysed patients: Clcr < 15 ml/min: 2.5 mg on the day of dialysis. **[PRECAUTION IN USE] 1. Warnings:** 1) *The risk of neutropenia/agranulocytosis in the patient with immune-deficiency:* This occurs rarely in uncomplicated patients but more likely in patient with collagen vascular disease such as systemic lupus erythematosus, scleroderma and renal failure by immunosuppressant. If the ACE inhibitor should be administered to these patients, the risk/benefit ratio should be assessed carefully. 2) *Angioedema:* perindopril should promptly be discontinued and appropriate monitoring should be initiated and continued until complete resolution of symptoms has occurred. Angioedema associated with laryngeal oedema may be fatal. 3) *Anaphylactoid reactions during desensitization:* The treatment with ACE inhibitor to the allergic patient during desensitization treatment should be started carefully and this drug should not be administered to the patients with venom immunotherapy. However, if the patient needs both ACE inhibitor & desensitizing treatment, these reactions can be avoided by temporarily withholding ACE inhibitor at least 24 hours before treatment. 4) *Anaphylactoid reactions during membrane exposure:* Patients receiving ACE inhibitors during dialysis with high flux membranes or low-density lipoprotein (LDL) apheresis with dextran sulphate have experienced life-threatening anaphylactoid reactions. So, ACE inhibitor should not be administered to these patients. However, if the patient needs both ACE inhibitor & dialysis with high flux membranes or LDL apheresis, these reactions were avoided by temporarily withholding ACE inhibitor therapy at least 24 hours prior to each apheresis. 5) *Pregnancy:* When pregnancy is diagnosed, treatment with ACE inhibitors should be stopped immediately. **2. Contraindications:** 1) Hypersensitivity to the active substance, to any of the excipients or to any other ACE inhibitor. 2) History of angioedema associated with previous ACE inhibitors. 3) Hereditary or idiopathic angioedema. 4) Patients undergoing hemodialysis with acrylonitrile sulphonate sodium membrane. 5) Hyperlipidemia patients receiving LDL apheresis treatment (patients undergoing LDL apheresis with dextran sulphate cellulose). 6) Pregnancy or potential pregnancy, lactation. 7) The drug is usually not administered in case of combinations with potassium-sparing diuretics, potassium salts, lithium. 8) Patients with bilateral renal artery stenosis or single functioning kidney artery stenosis. 9) Hyperkalemia. 10) Aortic valve stenosis, mitral valve stenosis or obstruction in the outflow. 11) Idiopathic hyperaldosteronism. 12) Children and adolescents (< 18 years). 13) Kidney transplant patients. 14) Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption. 15) Concomitant use of Acertil tablet with renin inhibitor (aliskiren) in patients with diabetes mellitus or moderate to severe renal impairment (GFR < 60ml/min/1.73m²). 16) ACEI and ARB should not be used concomitantly in patients with diabetic nephropathy. 17) Patients who administer Neprilysin(NEP) inhibitor or within 36 hours after discontinuation. **3. Careful Administration:** 1) Renal impairment. 2) Excessive fall in blood pressure may occur in following patients, so, initiation of therapy should be done with low dose and dose increase should be performed under close medical supervision: (1) severe hypertension (2) hemodialysis (3) volume or sodium depletion (4) dietary salt restriction (5) severe heart failure. 3) Elderly patients. 4) Dual blockade of RAAS (There is evidence that the concomitant use of ACE-inhibitors, ARBs or aliskiren increases the risk of hypotension, hyperkalaemia and decreased renal function (including acute renal failure). Dual blockade of RAAS is therefore not recommended. If dual blockade therapy is considered absolutely necessary, this should only occur under specialist supervision and subject to frequent close monitoring of renal function, electrolytes and blood pressure. 5) Patients with ischemic or cerebrovascular disease. 6) Hepatic failure. 7) Hypertropic cardiomyopathy **4. Undesirable Effects** (1) *Common(≥1/100, <1/10):* Headache, dizziness, vertigo, paraesthesia, visual disturbances, tinnitus, hypotension and effects related to hypotension, cough, dyspnoea, nausea, vomiting, abdominal pain, dysgeusia, dyspepsia, diarrhoea, constipation, rash, prurit, muscle cramps, asthenia. (2) *Uncommon(≥1/1,000, <1/100):* Eosinophilia, hypoglycaemia, hyperkalaemia, hyponatraemia, mood disturbances, sleep disorder, somnolence, syncope, palpitations, tachycardia, vasculitis, bronchospasm, dry mouth, angioedema of face, extremities, lips, mucous membranes, tongue, glottis and/or larynx, urticaria, photosensitivity reactions, pemphigoid, hyperhydrosis, eczema, arthralgia, myalgia, renal insufficiency, erectile dysfunction, chest pain, malaise, oedema peripheral, pyrexia, blood urea increased, blood creatinine increased, fall. (3) *Rare(≥1/10,000, <1/1,000):* Psoriasis (including psoriasis aggravation), blood bilirubin increased, hepatic enzyme increased. (4) *Very rare(<10,000):* Agranulocytosis or pancytopenia, haemoglobin decreased and haematocrit decreased, leucopenia/neutropenia, thrombocytopenia, haemolytic anaemia in patients with a congenital deficiency of G-6PDH, confusion, angina pectoris, arrhythmia, myocardial infarction (possibly secondary to excessive hypotension in high risk patients), stroke (secondary to excessive hypotension in high-risk), eosinophilic pneumonia, rhinitis, pancreatitis, hepatitis either cytolitic or cholestatic, erythema multiform, acute renal failure. (5) *Not known:* Raynaud's phenomenon. - Syndrome of inappropriate antidiuretic hormone secretion (SIADH) can be considered as a very rare but possible complication associated with ACE inhibitor therapy. **5. Precautions for use** (1) *Stable coronary artery disease:* if unstable angina pectoris during first month, appraisal of benefit/risk before treatment continuation. (2) *Hypotension:* Symptomatic hypotension is seen rarely in uncomplicated hypertensive patients and is more likely to occur in patients who have been volume-depleted e.g. by diuretic therapy, dietary salt restriction, dialysis, diarrhea or vomiting, or who have severe renin-dependent hypertension. In patients at increased risk of symptomatic hypotension, initiation of therapy and dose adjustment should be closely monitored. Similar considerations apply to patients with ischemic heart or cerebrovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. A transient hypotensive response is not a contraindication to further doses, which can be given usually without difficulty once the blood pressure has increased after volume expansion. (3) *Aortic and mitral valve stenosis/hypertrophic cardiomyopathy:* use with caution. (4) *Renal impairment:* In cases of renal impairment (creatinine clearance < 60 ml/min) the initial perindopril dosage should be adjusted according to the patient's creatinine clearance. And potassium and creatinine should be monitored on a regular basis. In some patients with bilateral renal artery stenosis or stenosis of the artery to a solitary kidney, who have been treated with ACE inhibitors, increases in blood urea and serum creatinine, usually reversible upon discontinuation of therapy, have been seen. If renovascular hypertension is also present there is an increased risk of severe hypotension and renal insufficiency. In these patients, treatment should be started under close medical supervision with low doses and careful dose titration. (5) *Hypersensitivity/Angioedema:* Angioedema of the face, extremities, lips, mucous membranes, tongue, glottis and/or larynx has been reported rarely in patients treated with ACE inhibitors, including this drug. Concomitant use of NEP inhibitors (e.g. sacubitril, racecadotril) and ACE inhibitors may also increase the risk of angioedema. (6) *Combination with mTOR inhibitors:* Patients taking concomitant mTOR inhibitors (e.g. sirolimus, everolimus, temsirolimus) therapy may be at increased risk for angioedema. (7) *Hepatic failure:* Rarely, ACE inhibitors have been associated with a syndrome that starts with cholestatic jaundice and progresses to fulminant hepatic necrosis and (sometimes) death. Patients receiving ACE inhibitors who develop jaundice or marked elevations of hepatic enzymes should discontinue the ACE inhibitor and receive appropriate medical follow-up. (8) *Neutropenia/Agranulocytosis/Thrombocytopenia/Anemia:* Perindopril should be used with extreme caution in patients with collagen vascular disease, immunosuppressant therapy, treatment with allopurinol or procainamide, or a combination of these complicating factors, especially if there is pre-existing impaired renal function. If perindopril is used in such patients, periodic monitoring of white blood cell counts is advised and patients should be instructed to report any sign of infection (e.g. sore throat, fever). (9) *Race:* Perindopril may be less effective and cause a higher rate of angioedema in black people than in non-black. (10) *Cough:* The cough is non-productive, persistent and resolves after discontinuation of therapy. (11) *Surgery/Anaesthesia:* stop treatment one day prior to surgery. (12) *Hyperkalaemia: Risk* factors for the development of hyperkalemia include those with renal insufficiency, worsening of renal function, age (> 70 years), diabetes mellitus, intercurrent events, in particular dehydration, acute cardiac decompensation, metabolic acidosis and concomitant use of potassium-sparing diuretics, potassium supplements or potassium-containing salt substitutes; or those patients taking other drugs associated with increases in serum potassium. If concomitant use of the above-mentioned agents is deemed appropriate, they should be used with caution and with frequent monitoring of serum potassium. (13) *Diabetic patients:* monitor glycaemia during first month. (14) *Primary aldosteronism:* use not recommended in patients with primary hyperaldosteronism (not responding to drugs acting through inhibition of the renin-angiotensin system). **6. Interactions** (1) *Drugs inducing hyperkalaemia:* aliskiren, potassium salts, potassium-sparing diuretics, ACE inhibitors, ARBs, NSAIDs, heparins, immunosuppressant agents such as ciclosporin or tacrolimus, trimethoprim. (2) *Contra-indicated:* Aliskiren (in diabetic or impaired renal patients), ARBs (in patients with diabetic nephropathy), potassium-sparing diuretics (e.g. spironolactone, eprelenone, triamterene, amiloride), potassium salt, lithium, Neutral endopeptidase (NEP) inhibitor (e.g. sacubitril, racecadotril), Extracorporeal treatments. (3) *Not recommended:* Aliskiren (in other patients), ARBs, Estramustine, Co- trimoxazole (trimethoprim/sulfamethoxazole), mTOR inhibitors (e.g. sirolimus, everolimus, temsirolimus). (4) *Special care:* Antidiabetic agents (insulins, oral hypoglycaemic agents), Baclofen, Non-potassium sparing diuretics, NSAIDs including aspirin ≥ 3g/day. (5) *Some care:* Antihypertensive agents, Vasodilators, Gliptines (linagliptine, saxagliptine, sitagliptine, vildagliptine), Tricyclic antidepressants, Antipsychotics, Anesthetics, Sympathomimetics, Gold. **7. Pregnancy and Breastfeeding:** (1) Pregnancy: Perindopril should not be initiated during pregnancy. When pregnancy is diagnosed, treatment with ACE inhibitors should be stopped immediately, and, if appropriate, alternative therapy should be started. (2) Breastfeeding: Alternative treatments with better established safety profiles during breast-feeding are preferable. **8. Drive and use machine:** Individual reactions related to low blood pressure may occur in some patients, particularly at the start of treatment or in combination with another antihypertensive medication. **[PACKAGING]** 30 tablets **(Revised on 1st May 2020)**

※ Please refer to the most current prescribing information for the detailed information.

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