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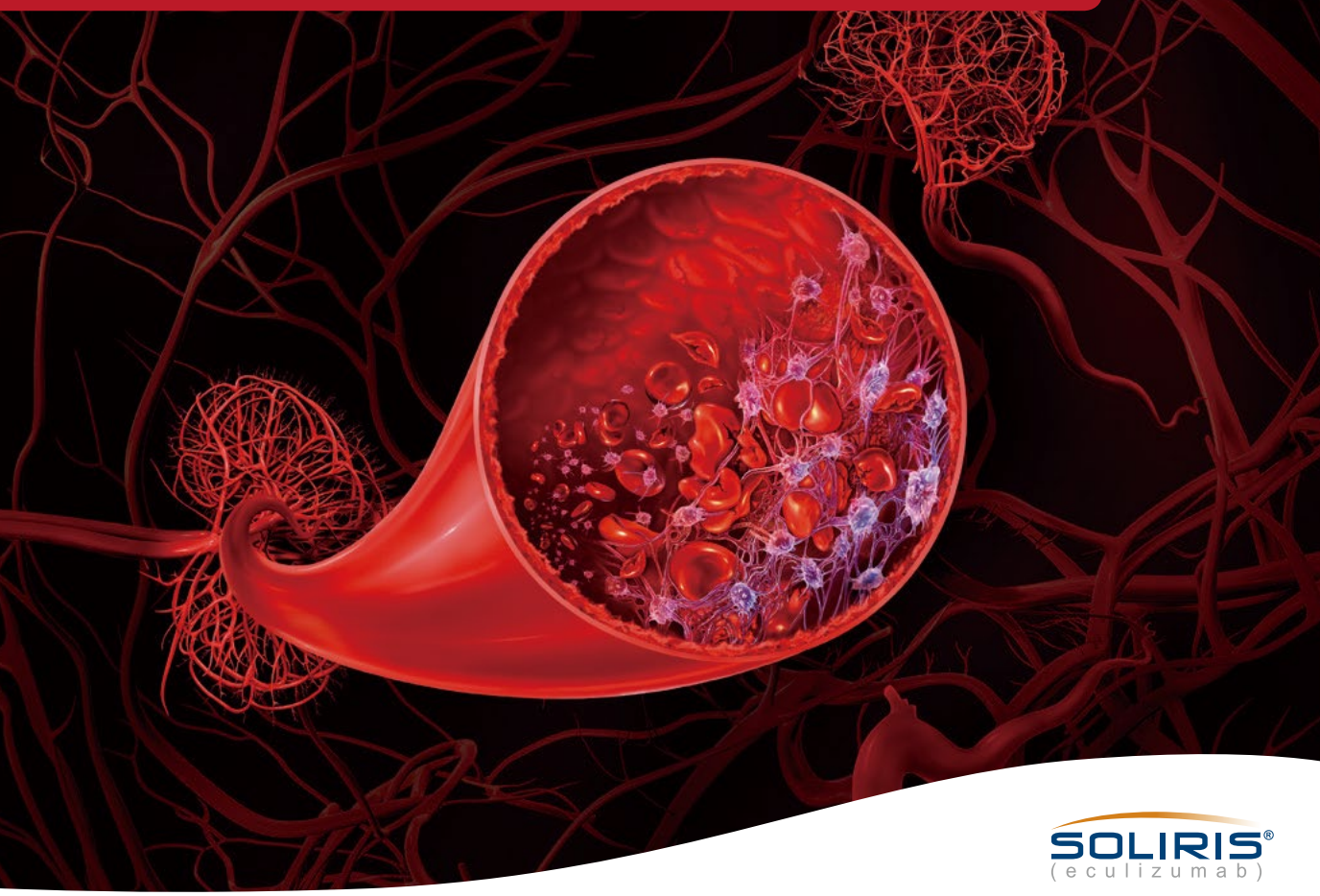
Patients with aHUS can be at continuous risk of the life-threatening consequences of unpredictable complement-mediated TMA[1,2]

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



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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] 솔리리스 주 **[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 시신경 척수염 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 권장 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. 혼한 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, 뮤린 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: 작용기전으로 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. 에쿨리주맙에 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 유사질환모든 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.**

KR.ECU.21.03.16

ALEXION

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

HANDOK

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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인벨라 정

세벨라머탄산염

Head to Head 3상 임상 시험[2]으로
30개국 이상에서 허가 판매[3]

인벨라정 제품요약정보[4]

【제품명】 인벨라정(세벨라머탄산염) **【원료약품 및 그 분량】** 이 약 1정 중 인벨라정 유효성분: 세벨라머탄산염(별규)…800 mg **【효능·효과】** 투석을 받고 있는 만성 신장질환 환자의 혈청 인 조절 **【용법·용량】** 이 약은 1일 3회 식사와 함께 복용하여야 한다. 1) 인산결합제를 복용하고 있지 않는 환자에 투여하는 경우 (중략) •혈청인 5.5~7.5 mg/dL: 1회 1정, 1일 3회 식사와 함께 복용 •혈청인 7.5 mg/dL 이상: 1회 2정, 1일 3회 식사와 함께 복용 (후략) **【사용상의 주의사항】** 1. 다음 환자에는 사용하지 말 것. 1) 이 약의 주성분 및 부형제에 과민한 환자 2) 저인산혈증 환자 3) 장폐색 환자(이 약은 장관내에서 팽윤하여 장관천공을 일으킬 우려가 있다.) 4) 이 약은 유당을 함유하고 있으므로, 갈락토오스 불내성(galactose intolerance), Lapp 유당분해효소 결핍증(Lapp lactose deficiency) 또는 포도당-갈락토오스 흡수장애(glucose-galactose malabsorption) 등의 유전적인 문제가 있는 환자에게는 투여하면 안 된다. 2. 다음 환자에게는 신중히 투여할 것. 장관협착 또는 변비가 있는 환자(이 약은 장관 내에서 팽윤하여 장폐색, 장관 천공을 일으킬 우려가 있다.) **【제조자】** Synthon Hispania SL Castello 1 Poligono Las Salinas 08830 Sant Boi de Llobrgat, Barcelona Spain **【소분제조자】** 에스케이케미칼(주) 충청북도 청주시 흥덕구 산단로 149 **【판매자】** 에스케이케미칼(주) 경기도 성남시 분당구 판교로 310 2017.02.02 개정

※ 처방하시기 전 제품설명서 전문을 참고하십시오. 최신 허가사항에 대한 정보는 '식품의약품안전처 의약품안전나라 (https://nedrug.mfds.go.kr/index)'에서 확인할 수 있습니다.

References 1. Sevelamer carbonate FDA Prescribing information(revised 4/30/2020) **2.** 인벨라정 3상임상시험결과보고서, Data on file, SK chemicals. Up dated 2013 Mar 22 **3.** 인벨라정 허가판매국, Data on file, SK chemicals. Up dated 2017 Aug 10 **4.** 인벨라정 허가정보, 온라인의약도서관.[Cited 2022 Apr 07] Available from:http://drug.mfds.go.kr/ 5. Ketteler M et al., Kidney Int. 2017 Jul;92(1):26–36

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[사용상의 주의사항] 1. 다음 환자에는 투여하지 말 것 – 소화관 통과 장애가 있는 환자 (배설에 저장을 초래할 염려가 있다)
Ref. 1. Hwang YC, et al. J Korean Med Sci. 2019;34(15):e117
※기타 자세한 사항은 제품설명서를 참고하십시오.

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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 신**기능 악화, ESKD, 신장 또는 심혈관 질환으로 인한 사망위험 39% 감소**[2,*]
- 제 2형 당뇨환자에 **알부민뇨 개선 및 악화감소** 이점[3]

* 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)

일러스트는 가상의 환자입니다.

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

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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】
제2형 당뇨병
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.
만성 심부전 및 만성신장병
이 약의 권장용량은 1일 1회 10 mg이다.
특수 집단
신장애
– eGFR 45mL/min/1.73m² 미만 : 혈당조절 개선 목적으로 이 약을 투여하는 것은 권장되지 않는다.
– eGFR 25mL/min/1.73m² 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.
투여방법
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/1.73m² 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/1.73m² 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 m² 미만인 환자에게 투여를 시작한 경험이 제한적이다. eGFR 25mL/min/1.73m² 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.

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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 ℃ and avoid freezing

PACKAGING

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

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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.

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*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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- 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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PROGRAM BOOK CONTENTS

Overview

Title	The 42nd Annual Meeting of the Korean Society of Nephrology (KSN 2022)
Date	May 26 (Thu) - 29 (Sun), 2022
Hosted by	The Korean Society of Nephrology, Korean Nephrology Research Foundation
Meeting Format	Hybrid Meeting (Korean Participants: Offline only, International Participants: Online only)
Official Language	English, Korean
Program	Opening Ceremony, Plenary Sessions, Invited Lecture Sessions, Oral & Poster Sessions, Exhibition
Secretariat	The Korean Society of Nephrology #301 (Miseung Bldg.) 23, Apgujeong-ro 30-gil, Gangnam-gu, Seoul, 06022, KOREA Tel: 82-2-3486-8736 | Fax: 82-2-3486-8737 | E.mail: ksn@ksn.or.kr KSN 2022 Secretariat 4Fl. 10, Yeoksam-ro 7-gil, Gangnam-Gu, Seoul, 06244, Korea Tel : +82-2-6207-8175 | Fax : +82-2-521-8683 | E-mail : office@ksnmeeting.kr

The Korean Society of Nephrology Organization

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The Korean Society of Nephrology Organization

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Welcome Message

Chul Woo Yang, M.D.

President
The Korean Society of Nephrology

Yang Wook Kim, M.D.

Congress President
The Korean Society of Nephrology

Dear Colleagues,

On behalf of the Korean Society of Nephrology, we would like to welcome all participants to the 42nd Annual Meeting of the Korean Society of Nephrology (KSN 2022).

We organized past 2 year's KSN meeting 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 will be better in 2022. However, we are afraid that it may be difficult to travel abroad yet. Therefore, KSN 2022 will be held in a hybrid format combining in-person and virtual programs. It's a pity in the face of a global pandemic that we can't enjoy the fascinating face-to-face meeting in Seoul with international participants, but we will try to make the meeting that all participants can as much as possible actively engage in and fully enjoy it through virtual components.

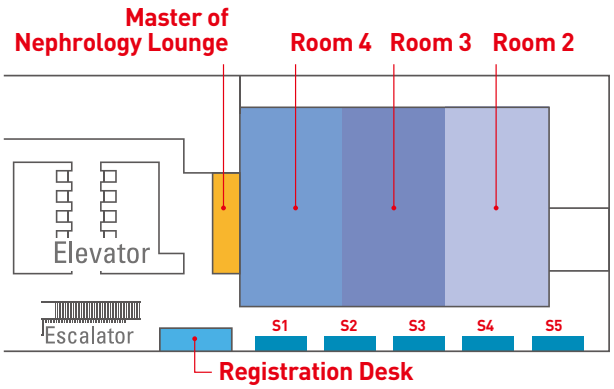
KSN 2022 is the 7th international meeting since 2016, when the KSN expanded its national scientific meeting to an international meeting. Every year, more than 2,500 kidney professionals attend the annual meeting with some 200 experts from all over the world delivering the latest findings and engaging in high-quality discussions.

Under the theme "K-Nephrology! Together with Asia!", KSN 2022 covers a wide range of hot topics 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 2022 will be invaluable in deepening your knowledge and broadening your global network.

Once again, we welcome you to KSN 2022 meeting, and please share your valuable expertise with us and enjoy the programs prepared for you at KSN 2022.

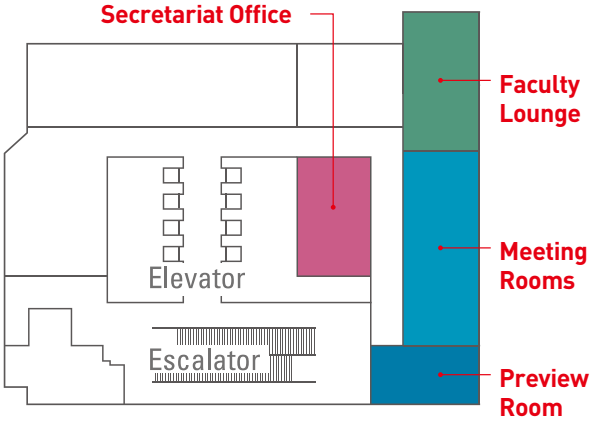
Sincerely yours,

Floor Plan



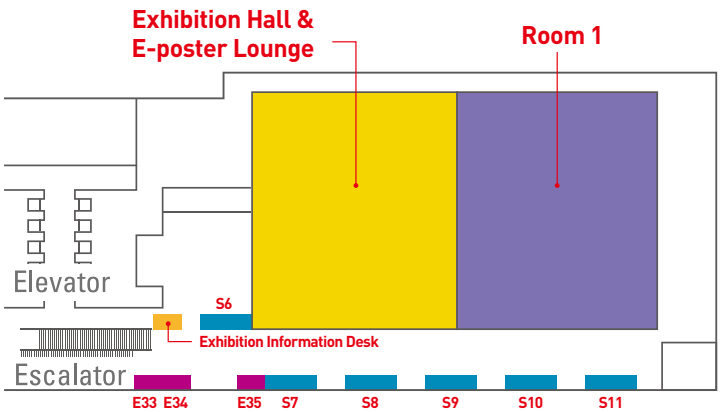
3F

- Room 2
- Room 3
- Room 4
- Master of Nephrology Lounge
- Registration Desk



4F

- Preview Room
- Meeting Rooms
- Faculty Lounge
- Secretariat Office



5F

- Room 1
- Exhibition Hall & E-poster Lounge

Facility Operating Hours

Registration Desk

Date	Operating Hours	Location
May 26 (Thu)	07:30~17:50	Lobby (3F)
May 27 (Fri)	07:30~17:50	
May 28 (Sat)	07:30~18:10	
May 29 (Sun)	07:30~16:40	

Preview Room

Date	Operating Hours	Location
May 26 (Thu)	07:30~17:50	Baekje 5 (4F)
May 27 (Fri)	07:30~17:50	
May 28 (Sat)	07:30~18:10	
May 29 (Sun)	07:30~16:40	

Faculty Lounge

Date	Operating Hours	Location
May 26 (Thu)	07:30~18:50	Baekje 1 (4F)
May 27 (Fri)	07:30~18:50	
May 28 (Sat)	07:30~19:10	
May 29 (Sun)	07:30~17:40	

Exhibition Hall & E-poster Lounge

Date	Operating Hours	Location
May 26 (Thu)	08:00~19:00	Lobby (3F, 5F), Exhibition Hall (5F)
May 27 (Fri)	08:00~19:00	
May 28 (Sat)	08:00~19:00	
May 29 (Sun)	08:00~18:00	

Program at a glance

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

Day 1 May 26 (Thursday)

Time	Room 1 (5F)	Room 2 (3F)	Room 3 (3F)	Room 4 (3F)
08:30-10:30	**PG Education 1** Hemodialysis	**PG Education 2** Fluid & Electrolyte	**PG Education 3** Kidney Transplantation	**Oral Communications 1**
10:30-10:40	Break			
10:40-12:40	**PG Education 4** Peritoneal Dialysis	**PG Education 5** Intervention Nephrology	**ISN Basic Science Symposium** (10:40-13:10)	**Oral Communications 2**
12:40-13:30		**Industry Symposium 1** 한국아스트라제네카(주)		**Industry Symposium 2** 한국아스텔라스제약(주)
13:30-15:30	**Big Data**	**Hypertension and Vascular Biology**	**Pathology** (13:40-16:40)	**Oral Communications 3**
15:30-15:40	Break			Break
15:40-17:40	**Asian Nephrology Forum**			
17:40-17:50	Break			
17:50-18:00		**Opening Remarks**		
18:00-18:50		**Plenary Lecture 1** Peter Stenvinkel		
18:50-19:00	Break			
19:00-21:00				**Welcome Reception**

Day 2 May 27 (Friday)

Time	Room 1 (5F)	Room 2 (3F)	Room 3 (3F)	Room 4 (3F)
08:30-10:30	**Acute Kidney Injury 1**	**Chronic Kidney Disease 1**	**KSN-EDTA Joint Symposium**	**Becoming a New Basic Researcher**
10:30-10:40	Break			
10:40-12:40	**HK-KSN Joint Symposium** (Acute Kidney Injury 2)	**Diabetic Kidney Disease**	**Basic Research**	**Oral Communications 4**
12:40-13:30	**Industry Symposium 3** (주)유한양행	**Industry Symposium 4** 한독	**Industry Symposium 5** 한국교와기린(주)	**Industry Symposium 6** JW 중외제약(주)
13:30-13:40	Break			
13:40-14:30		**Plenary Lecture 2** Best Abstracts		
14:30-14:40	Break			
14:40-16:40	**Kidney Transplantation 1**	**Chronic Kidney Disease 2**	**Award Session** (14:40-16:00)	**Oral Communications 5**
16:40-16:50	Break			
16:50-18:50	**Kidney Transplantation 2**	**KSN Research Fund Project**	**R&D in Nephrology**	

Program at a glance

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

Day 3 May 28 (Saturday)

Time	Room 1 (5F)	Room 2 (3F)	Room 3 (3F)	Room 4 (3F)
07:00-08:30	KSN Board of Regent			
08:30-10:30	Hemodialysis 1	Peritoneal Dialysis	KSN-ISN Joint Symposium	Oral Communications 6
10:30-10:40	Break			
10:40-12:40	JSN-KSN Joint Symposium (Hemodialysis 2)	Genetic Disease	KSN-TSN-JSDT Joint Symposium	Future Medicine
12:40-13:30		Industry Symposium 7 (주)FMC코리아	Industry Symposium 8 (주)박스터	Industry Symposium 9 보령제약(주)
13:30-14:00	General Assembly	Break		
14:00-14:50		Plenary Lecture 3 Masaomi Nangaku		
14:50-15:00	Poster Visiting			
15:00-17:00	Fluid and Electrolyte	Pediatric Nephrology	APSN-KSN CME Course 1	KDIGO-KSN Joint Symposium (15:00-18:00)
17:00-17:10	Break			
17:10-19:10	Geriatric Nephrology	Glomerulonephritis	APSN-KSN CME Course 2	

Day 4 May 29 (Sunday)

Time	Room 1 (5F)	Room 2 (3F)	Room 3 (3F)	Room 4 (3F)
08:30-10:30	Nephrology Board Review Course 1 별도 현장등록 필요	Dialysis Specialist Physician Course 1	Dialysis Nurse Course 1	KSN-KSH Joint Symposium (Korean Society of Hypertension)
10:30-10:40	Break			
10:40-12:40	Nephrology Board Review Course 2 별도 현장등록 필요	Dialysis Specialist Physician Course 2	Dialysis Nurse Course 2	KSN-KES Joint Symposium (Korean Endocrine Society)
12:40-13:30		Industry Symposium 10 SK케미칼(주)	Industry Symposium 11 한국오츠카제약(주)	Industry Symposium 12 HK이노엔(주)
13:30-15:30	KSN-KSCN Joint Symposium (Korean Society of Clinical Nutrition)	KORDS Report / Diaylsis Center Accreditation	New Field in Nephrology	National Projects in Nephrology
15:30-15:40	Break			
15:40-17:40	Ethics Education 필수강의 윤리교육	Kidney Academy	KSN Cooperative Study	Oral Communications 7

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

Day 1 May 26 (Thursday)

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

Vascular Access for Hemodialysis

KOR↔ENG Room 1 (5F)

Chair(s)
Ki Ryang Na Chungnam National University Hospital, Korea
Hyung Seok Lee Hallym University Sacred Heart Hospital, Korea

Surgical Anatomy and Radiological Imaging of Vascular Access for Hemodialysis	**Yaeni Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
Strategies to Improve Patency of Vascular Access	**Sangeon Gwoo** Changwon Hanmaeum Hospital, Korea
Assessment of Vascular Access Using Ultrasonography (Live Demonstration)	**Eun Jung Kim** Hallym University Dongtan Sacred Heart Hospital, Korea
Practical Aspects of Tunneled Catheter for Maintenance Hemodialysis	**Hyeon Seok Hwang** Kyung Hee University School of Medicine, Korea

08:30-10:30 PG Education 2 (Fluid & Electrolyte)

Difficult Cases of Electrolyte Disturbances

KOR↔ENG Room 2 (3F)

Chair(s)
Gheun-Ho Kim Hanyang University Medical Center, Korea
Sejoong Kim Seoul National University Bundang Hospital, Korea

Complicated Cases of Hyponatremia	**Seon Ha Baek** Hallym University Dongtan Sacred Heart Hospital, Korea
Sjogren Syndrome and Renal Tubular Acidosis Type 1	**Hong Sang Choi** Chonnam National University Hospital, Korea
Hyperkalemia Encountered in RAAS Inhibitor Users	**Tae-Hyun Yoo** Yonsei University College of Medicine, Korea
Hyperkalemia and Hypomagnensemia in KT Recipients	**Yong Chul Kim** Seoul National University Hospital, Korea

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

Smart Management for Medical Complications After Kidney Transplantation

KOR↔ENG Room 3 (3F)

Chair(s)
Sik Lee Jeonbuk National University Medical School, Korea
Ho Sik Shin Kosin University Gospel Hospital, Korea

Monitoring and Management of NODAT	**Jung Pyo Lee** Seoul National University College of Medicine, Korea
Monitoring and Management of Persistent Hyperparathyroidism After KT	**Gang Jee Ko** Korea University Guro Hospital, Korea
Cancer Screening Strategy After KT	**Kyung Don Yoo** Ulsan University Hospital, Korea

08:30-10:30 Oral Communication 1

Acute Kidney Injury

ENG Room 4 (3F)

Chair(s)
Seo Rin Kim Pusan National University Yangsan Hospital, Korea
In O Sun Presbyterian Medical Center, Korea

OC1-01 ~ OC1-12

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

10:40-12:40 PG Education 4 (Peritoneal Dialysis)

Basic Principles in PD

KOR↔ENG Room 1 (5F)

Chair(s) **Duk-Hee Kang** Ewha Womans University Medical Center, Korea
Sun-Hee Park Kyungpook National University Hospital, Korea

ISPD Peritonitis Guideline: 2022 Update	**Philip Li** Chinese University of Hong Kong, Hong Kong
Volume Control in PD	**Young Sun Kang** Korea University Ansan Hospital, Korea
Prescribing PD	**Tae Ik Chang** National Health Insurance Service Ilsan Hospital, Korea
Peritoneal Membrane Dysfunction	**Tae-Hyun Yoo** Yonsei University College of Medicine, Korea

10:40-12:40 PG Education 5 (Intervention Nephrology)

KOR↔ENG Room 2 (3F)

Chair(s) **Sung Gyun Kim** Hallym University Sacred Heart Hospital, Korea
Seung Jung Kim Ewha Womans University Mokdong Hospital, Korea

Basic Principles of Vascular Access for Hemodialysis	**Hyung Seok Lee** Hallym University Sacred Heart Hospital, Korea
The Role of Pocus in Hemodialysis Unit	**Eun Jung Kim** Hallym University Dongtan Sacred Heart Hospital, Korea
How to Overcome AV Access Thrombotic Flow-related Complications	**Jin Ho Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
How to Overcome AV Access Non-thrombotic Complications	**Sangeon Gwoo** Changwon Hanmaeum Hospital, Korea

10:40-13:10 Basic Science Symposium: A Session of the ISN North and East Asia Regional Board

KOR↔ENG Room 3 (3F)

Chair(s) **Sang Ho Lee** Kyung Hee University Hospital at Gangdong, Korea
Motoko Yanagita Kyoto University Graduate School of Medicine, Japan

Identification of an A-Kinase Anchor Protein Essential for Urinary Concentration	**Fumiaki Ando** Tokyo Medical and Dental University, Japan
B Cell Repertoire in Lupus Nephritis - Role in Disease Pathogenesis and Implications on Treatment	**Desmond Yap** Queen Mary Hospital, Hong Kong
AKI and Gut Dysbiosis	**Jihyun Yang** Korea University Anam Hospital, Korea
Role of Extracellular Vesicles in Kidney Disease: From Mechanism to Translational Application	**Linli Lv** Southeast University School of Medicine, China
Determinants of Gut-derived Uremic Toxins	**Ting-Yun Lin** Taipei Tzu Chi Hospital, Taiwan

10:40-12:40 Oral Communication 2

Electrolyte, Hypertension and New Fields

ENG Room 4 (3F)

Chair(s) **Se Won Oh** Korea University Anam Hospital, Korea
Kyubok Jin Keimyung University Dongsan Medical Center, Korea

OC2-01 ~ OC2-11

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12:40-13:30	**Industry Symposium 1** Sponsored by AstraZeneca		KOR	**Room 2 (3F)**
Chair(s)	**Jae Hyun Chang**	Gachon University Gil Medical Center, Korea		
SGLT2 Inhibitors Breakthrough in CKD Treatment and Management			**Jong Hyun Jhee** Gangnam Severance Hospital, Korea	
12:40-13:30	**Industry Symposium 2** Sponsored by Astellas		KOR	**Room 4 (3F)**
Chair(s)	**Jong Soo Lee**	Ulsan University Hospital, Korea		
The Optimal Tacrolimus Level Safe from Nephrotoxicity and Infection			**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea	
13:30-15:30	**Big Data** *Observational Data Modeling for Causal Effects: When and How to Use Them?*		KOR↔ENG	**Room 1 (5F)**
Chair(s)	**Tae Ik Chang** **Gang Jee Ko**	National Health Insurance Service Ilsan Hospital, Korea Korea University Guro Hospital, Korea		
Propensity Score Matching			**Sohee Park** Yonsei University Graduate School of Public Health, Korea	
Marginal Structural Models			**Hyun Sun Lim** National Health Insurance Service Ilsan Hospital, Korea	
Mendelian Randomization Study: An Analytic Tool to Investigate Causal Effects with Observational Data			**Sehoon Park** Seoul National University Hospital	
13:30-15:30	**Hypertension and Vascular Biology** *Innovations in BP Target*		KOR↔ENG	**Room 2 (3F)**
Chair(s)	**Soo Wan Kim** **Hyosang Kim**	Chonnam National University Medical School, Korea Asan Medical Center, University of Ulsan College of Medicine, Korea		
Longitudinal BP Trajectory and CKD Progression			**Young Su Joo** Yongin Severance Hospital, Korea	
Cumulative Hypertension Burden and Renal Outcome			**Chang Seong Kim** Chonnam National University Hospital, Korea	
KDIGO Target for Systolic BP in CKD of < 120mmHg - Pro			**Jwa-Kyung Kim** Hallym University Sacred Heart Hospital, Korea	
KDIGO Target for Systolic BP in CKD of < 120mmHg - Con			**Yang Gyun Kim** Kyung Hee University Hospital at Gangdong, Korea	
13:40-16:40	**Pathology**		KOR↔ENG	**Room 3 (3F)**
Chair(s)	**Yeong-Jin Choi** **Beom Jin Lim**	The Catholic University of Korea, Seoul St. Mary's Hospital, Korea Gangnam Severance Hospital, Korea		
LgA Nephropathy to IgA Nephropathy			**Yong-Jin Kim** Kyungpook National University Hospital, Korea	
Aristolochic Acid Nephropathy			**Gang Liu** Peking University, China	

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CPC 1	Pediatrics	**Yo Han Ahn** Seoul National University Hospital, Korea
	Clinical Discussion	**Jiwon Lee** Korea Disease Control and Prevention Agency, Korea
	Pathology	**Kyung Chul Moon** Seoul National University Hospital, Korea
CPC 2	Internal Medicine	**Tae-Hyun Yoo** Yonsei University College of Medicine, Korea
	Clinical Discussion	**Jung Eun Lee** Samsung Medical Center, Korea
	Pathology	**Beom Jin Lim** Gangnam Severance Hospital, Korea
CPC 3	Internal Medicine	**Hyosang Kim** Asan Medical Center, University of Ulsan College of Medicine, Korea
	Clinical Discussion	**Yang Gyun Kim** Kyung Hee University Hospital at Gangdong, Korea
	Pathology	**Heounjeong Go** Asan Medical Center, University of Ulsan College of Medicine, Korea

13:30-15:30 Oral Communication 3

Glomerulonephritis

ENG Room 4 (3F)

Chair(s) **Yu Ho Lee** Bundang CHA General Hospital, Korea
Hyeon Seok Hwang Kyung Hee University School of Medicine, Korea

OC3-01 ~ OC3-12

15:40-17:40 Asian Nephrology Forum

KOR↔ENG Room 1 (5F)

Chair(s) **Suchai Sritippayawan** Siriraj Hospital, Mahidol University, Thailand
Halim Adbul Gafor Universiti Kebangsaan Malaysia, Malaysia
Yang Wook Kim Inje University Haeundae Paik Hospital, Korea

Increasing of ESRD in Asia	**Young Rok Ham** Chungnam National University Hospital, Korea
Effectiveness of Multidisciplinary care in CKD management	**Pongsathorn Gojaseni** Bhumibol Adulyadej Hospital, Thailand
Challenges and Future Opportunities of PD in Asia	**Lily Mushahar** Hospital Tuanku Ja'afar, Malaysia
Do Asian Kidney Transplant Recipients Need Different Target Level of Maintenance Immunosuppressants?	**Jong Cheol Jeong** Seoul National University Bundang Hospital, Korea

17:50-18:00 Opening Remarks

KOR↔ENG Room 2+3 (3F)

18:00-18:50 Plenary Lecture 1

KOR↔ENG Room 2+3 (3F)

Chair(s) **Yang Wook Kim** Inje University Haeundae Paik Hospital, Korea

Food as a Medicine in CKD	**Peter Stenvinkel** Karolinska Institutet and Karolinska University Hospital, Sweden

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Day 2 May 27 (Friday)

08:30-10:30 Acute Kidney Injury 1 — KOR↔ENG — Room 1 (5F)

Chair(s): **Manish Kaushik**, SingHealth – MED, Singapore; **Dong Won Lee**, Pusan National University Yangsan Hospital, Korea

Clinical Course of AKI in Elderly Patients	**Se Won Oh**, Korea University Anam Hospital, Korea
AKI in Patients with COVID-19	**Jeong-Hoon Lim**, Kyungpook National University Chilgok Hospital, Korea
Novel Anticancer Drugs and Antibiotics Associated with Acute Kidney Injury	**Inwhee Park**, Ajou University Hospital, Korea
Clinical Informatics and Risk Prediction of AKI	**Horng Ruey Chua**, National University Health System, Singapore

08:30-10:30 Chronic Kidney Disease 1
Gut, Diet and Kidney Disease — KOR↔ENG — Room 2 (3F)

Chair(s): **Myung-Gyu Kim**, Korea University Anam Hospital, Korea; **Won Min Hwang**, College of Medicine, Konyang University, Korea

Glomerular Hyperfiltration and High Protein Nephropathy	**Kamyar Kalantar-Zadeh**, University of California Irvine, United States
The Association Between Gut Microbiota and Uremia of Chronic Kidney Disease	**Myung-Gyu Kim**, Korea University Anam Hospital, Korea
Targeting Immune Cell Metabolism in Kidney Diseases	**Niels Olsen Saraiva Câmara**, Federal University of Sao Paulo, Brazil
Blood Pressure Variability in CKD	**Sang Heon Suh**, Chonnam National University Hospital, Korea

08:30-10:30 KSN-EDTA Joint Symposium
Recent Advances in Kidney Disease — KOR↔ENG — Room 3 (3F)

Chair(s): **Danilo Filser**, Saarland University College of Medicine, Germany; **Beom Seok Kim**, Severance Hospital, Korea

Anemia and CKD-MBD Interaction	**Michele Eisenga**, University of Groningen, Netherlands
Anemia and the Heart in CKD	**Hoon Young Choi**, Gangnam Severance Hospital, Korea
scRNA Sequencing of the Kidney and the Heart	**Christoph Kuppe**, RWTH Aachen University, Germany
Current Status of Exosomal Research and Its Clinical Implication in Kidney Disease	**Sang Ho Lee**, Kyung Hee University Hospital at Gangdong, Korea

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08:30-10:30 Becoming a New Basic Researcher

KOR Room 4 (3F)

Chair(s) **Seungyeup Han** Keimyung University School of Medicine, Korea
Su-Hyun Kim Chung-Ang University Hospital, Korea

Challenge on a National Research Foundation Project : Multi-Center, Randomized Controlled Trials in Nephrology	**Seon Ha Baek** Hallym University Dongtan Sacred Heart Hospital, Korea
Preparing for Nephrology Research	**Jang-Hee Cho** Kyungpook National University Hospital, Korea
The Snowball Effect: From a Study to a Big Investigation	**Eun Hui Bae** Chonnam National University Medical School, Korea
How to Set Up a Good Research Lab	**Sang-kyung Jo** Korea University Anam Hospital, Korea

10:40-12:40 HK-KSN Joint Symposium

Acute Kidney Injury 2

KOR↔ENG Room 1 (5F)

Chair(s) **Won Kim** Jeonbuk National University Medical School, Korea
Sunny Wong Hong Kong Society of Nephrology, Hong Kong

Organ on a Chip in AKI	**Sejoong Kim** Seoul National University Bundang Hospital, Korea
VISTA of Kidney Macrophage in Acute Kidney Injury	**Seung Seok Han** Seoul National University Hospital, Korea
A New Paradigm for an Old Disease	**Benjamin So** Queen Mary Hospital, The University of Hong Kong, Hong Kong
From Microscopic to Macroscopic View	**Pang Wing Fai** Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong

10:40-12:40 Diabetic Kidney Disease

Recent Research Data in the Pathogenesis of the Diabetic Kidney Disease

KOR↔ENG Room 2 (3F)

Chair(s) **Sang-Youb Han** Inje University Ilsan Paik Hospital, Korea
Eun Young Lee Soonchunhyang University Cheonan Hospital, Korea

Ketone Bodies: Back to a Place in the Sun	**Shinji Kume** Shiga University of Medical Science, Japan
New Insights on Diabetic Kidney Disease-Ketone Bodies	**Yong-Ho Lee** Yonsei University College of Medicine
Single Cell RNA-Sequencing to Analyze the Role of Macrophage in Early Diabetic Kidney Disease	**John He** Icahn School of Medicine at Mount Sinai, United States
Single Cell Transcriptome of the Diabetic Kidney Reveals Dynamic Reprogramming Underlying Podocyte Regeneration and Injury	**Ju Young Moon** Kyung Hee University Hospital at Gangdong, Korea

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10:40-12:40	**Basic Research** *Autophagy and Genetic Kidney Diseases*		KOR↔ENG	**Room 3 (3F)**
Chair(s)	**Tae-Hwan Kwon** **Jihwan Park**	Kyungpook National University School of Medicine, Korea Gwangju Institute of Science and Technology, Korea		
Autophagy in Regulation of Aquaporins			**Weidong Wang** Sun Yat-sen University, China	
Genetic Kidney Disease and Kidney Organoids			**Yong Kyun Kim** The Catholic University of Korea, St. Vincent's Hospital, Korea	
Role of KLC3 of CILK1 Deficiency-Related PKD			**Jong Hoon Park** Sookmyung Women's University, Korea	
ADAMTS9-Related Renal Disorders and Disease Modeling			**Heon Yung Gee** Yonsei University College of Medicine, Korea	
10:40-12:40	**Oral Communication 4** *Pediatric/Geriatric/Big Data*		ENG	**Room 4 (3F)**
Chair(s)	**Min Hyun Cho** **Soon Kil Kwon**	Kyungpook National University Hospital, Korea Chungbuk National University College of Medicine, Korea		
OC4-01 ~ OC4-12				
12:40-13:30	**Industry Symposium 3** Sponsored by YUHAN		KOR	**Room 1 (5F)**
Chair(s)	**Kwon Wook Joo**	Seoul National University Hospital, Korea		
Kidney Protection with SGLT2 Inhibition: Nephrology Perspective			**David Z. Cherney** Toronto General Hospital, Canada	
12:40-13:30	**Industry Symposium 4** Sponsored by HANDOK		KOR	**Room 2 (3F)**
Chair(s)	**Ja-Ryong Koo**	Hallym University Dongtan Sacred Heart Hospital, Korea		
Patient's Journey of aHUS: Based on Center Experiences			**Chang Seong Kim** Chonnam National University Hospital, Korea	
12:40-13:30	**Industry Symposium 5** Sponsored by KYOWA KIRIN		KOR	**Room 3 (3F)**
Chair(s)	**Sun Ae Yoon**	The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea		
Anemia Management with NESP for CKD Patients			**Byung Chul Yu** Soonchunhyang University Bucheon Hospital, Korea	
12:40-13:30	**Industry Symposium 6** Sponsored by JW Pharmaceutical		KOR	**Room 4 (3F)**
Chair(s)	**Byoung Geun Han**	Yonsei University Wonju College of Medicine, Korea		
Cutting Edge Care of Pitavastatin with Ezetimibe Combination Therapy			**Soo Lim** Seoul National University Bundang Hospital, Korea	

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13:40-14:30	**Plenary Lecture 2** *Best Abstracts*	KOR↔ENG	**Room 2+3+4 (3F)**
Chair(s)	**Chun Soo Lim** SMG-SNU Boramae Medical Center, Korea **Seung Hyeok Han** Severance Hospital, Korea		
The Efficacy of Post-dilution Online Hemodialfiltration and Medium Cut-off Dialyser on the Removal of Protein-Bound Uremic Toxins		**Yang Gyun Kim** Kyung Hee University Hospital at Gangdong, Korea	
Development of New Human-Derived Induced Pluripotent Stem Cell Systems (iPSC) Applied to Drug Discovery for Kidney Diseases		**Maximilian Naujock** Evotec International GmbH, Germany	
Diagnostic Utility of the Targeted Next-Generation Sequencing Panel Test for Suspicious Genetic Glomerular Diseases		**Ji Hye Kim** Seoul National University Hospital, Korea	
The Effect of Diabetes in Morbidly Obese Patients on Circulating Exosomal Protein Profiles Before and After Bariatric Surgery		**Haekyung Lee** Soonchunhyang University Seoul Hospital, Korea	
14:40-16:40	**Kidney Transplantation 1** *Strategies for Improving Long Term Graft Survival*	KOR↔ENG	**Room 1 (5F)**
Chair(s)	**Jong Soo Lee** Ulsan University Hospital, Korea **Jaeseok Yang** Severance Hospital, Korea		
HLA Matching & Eplet Load		**Ruth Sapir-Pichhazde** McGill University, Canada	
Surveillance Biopsies in Kidney Transplantation		**David Rush** Health Sciences Centre, University of Manitoba, Canada	
DSA Monitoring & Treatment of Chr Active Ab Mediated Rejection		**Byungha Chung** The Catholic University of Korea, Korea	
Discussion		**Gyu Tae Shin** Ajou University Hospital, Korea **Jaeseok Yang** Severance Hospital, Korea **Byungha Chung** The Catholic University of Korea, Korea	
14:40-16:40	**Chronic Kidney Disease 2**	KOR↔ENG	**Room 2 (3F)**
Chair(s)	**Duk-Hee Kang** Ewha Womans University Medical Center, Korea **Soo Jeong Choi** Soonchunhyang University Bucheon Hospital, Korea		
Conservative and Preservative Approaches for the Management of CKD; Novel Dietary and Uremia Treatment Approaches		**Connie Rhee** University of California Irvine, United States	
Real World Data and Evidence: The Japan Chronic Kidney Disease Database		**Yuichiro Yano** Shiga University of Medical Science, Japan	
Socioeconomic Status: A Factor Need to Be Considered in CKD Management		**Eunjeong Kang** Ewha Womans University Medical Center, Korea	
Causality Between Risk Factors and CKD Inferred from Mendelian Randomization Analysis		**Dong Ki Kim** Seoul National University Hospital, Korea	

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14:40-16:00	**Award Session**	KOR↔ENG	Room 3 (3F)
MC	**Gang Jee Ko**	Korea University Guro Hospital, Korea	
Chair(s)	**Chul Woo Yang** **Kyu Bok Choi**	The Catholic University of Korea, Seoul St. Mary's Hospital, Korea Ewha Womans University Mokdong Hospital, Korea	
Award Ceremony			
KSN Academic Excellence Award Winner Lecture		**Hajeong Lee** Seoul National University Hospital, Korea	
KSN Young Investigator Award Winner Lecture		**Jeong-Hoon Lim** Kyungpook National University Chilgok, Korea	
KSN Lifetime Achievement Award Ceremony Remarks		**Gheun-Ho Kim** Hanyang University Medical Center, Korea	

14:40-16:40	**Oral Communications 5** *Transplantation*	ENG	Room 4 (3F)
Chair(s)	**Jong Cheol Jeong** **Jang-Hee Cho**	Seoul National University Bundang Hospital, Korea Kyungpook National University Hospital, Korea	
OC5-01 ~ OC5-12			

16:50-18:50	**Kidney Transplantation 2** *The Spectrum of Transplant Nephrologist in Asia*	KOR↔ENG	Room 1 (5F)
Chair(s)	**Yeong Hoon Kim** **Chan-Duck Kim**	Inje University Busan Paik Hospital, Korea Kyungpook National University Hospital, Korea	
Roles and Responsibilities of Nephrologists at Pre-transplant Period: Current State in Thailand		**Nuttasith Larpparisuth** Mahidol University, Thailand	
Management at the Transplant Event and Immediate Post-transplant Period: Current State in Taiwan		**Ming-Ju Wu** Taichung VGH, Taiwan	
Management at the Long-Term Post-transplant Period: Current State in Japan		**Ken Sakai** Toho University, Japan	
Safety and Follow-up of Living Donor		**Hye Ryoun Jang** Sungkyunkwan University, Korea	
Discussion		**Seungyeup Han** Keimyung University School of Medicine, Korea **Jong Cheol Jeong** Seoul National University Bundang Hospital, Korea **Ho Sik Shin** Kosin University Gospel Hospital, Korea	

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16:50-18:50	**KSN Research Fund Project**	KOR↔ENG	Room 2 (3F)
Chair(s)	**Bum Soon Choi** The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea **Hyung Jong Kim** Bundang CHA General Hospital, Korea		
Development of Urine-derived Kidney Tubuloid from Patients with Inherited Tubulopathies		**Ji Hyun Kim** Seoul National University Bundang Hospital, Korea	
Prediction of Death in Dialysis Patients Using Artificial Intelligence		**Jung Nam An** Hallym University Sacred Heart Hospital, Korea	
T-lymphocytes in Alport Syndrome		**Tae Ryom Oh** Chonnam National University Hospital, Korea	
The Efficacy and Safety of SGLT2 Inhibitors in Diabetic Kidney Transplant Recipients		**Jeong-Hoon Lim** Kyungpook National University Chilgok Hospital, Korea	
Disease Modeling of Karyomegalic Interstitial Nephritis Using Patient Derived Induced Pluripotent Stem Cells		**Sun-Woo Lim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea	

16:50-18:50	**R&D in Nephrology**	KOR↔ENG	Room 3 (3F)
Chair(s)	**Hyun Hee Na** Life Science Korea, Korea **Ju Young Moon** Kyung Hee University Hospital at Gangdong, Korea		
C01 Inhibits the Development of Kidney Fibrosis		**Hoe-Yune Jung** NovMetaPharma Co., Ltd. / Pohang University of Science and Technology, Korea	
Difelikefalin, a Novel Therapeutic Agent for the Treatment of Chronic Kidney Disease-Associated Pruritus in Adults Patients Receiving Hemodialysis: Results From Kalm 1 and Kalm 2 Phase 3 Trials		**Warren Wen** Cara Therapeutics Inc, United States	
Clinical Development of Efpeglenatide		**Seungjae Baek** Hanmi Pharmaceuticals, Korea	
Rgenorgano Biothechnology		**Yong Kyun Kim** The Catholic University of Korea, St. Vincent's Hospital, Korea	

Day 3 May 28 (Saturday)

08:30-10:30	**Hemodialysis 1** *Update on Troubling Medical Issues in HD Patients*	KOR↔ENG	Room 1 (5F)
Chair(s)	**Young Ok Kim** The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea **Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea		
Uptodate Review of the Management of Diabetes in Hemodialysis Patients		**Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea	
Uptodate Review of Intradialytic Hypotension - Mechanism, Clinical Impacts and Management		**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea	
Uptodate Review of Restless Legs Syndrome - Mechanism, Clinical Impacts and Management		**Hyo-Wook Gil** Soonchunhyang University Cheonan Hospital, Korea	
Uptodate Review of Antithrombotic Therapy for Hemodialysis Patients with Atrial Fibrillation		**Young Rim Song** Hallym University Sacred Heart Hospital, Korea	

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08:30-10:30	**Peritoneal Dialysis** *Current Topics in PD*	KOR↔ENG	Room 2 (3F)
Chair(s)	**Yong-Lim Kim** Kyungpook National University School of Medicine, Korea **Jun Young Do** Yeungnam University Medical Center, Korea		
KDIGO Recommendations for Home Dialysis		**Martin Wilkie** Sheffield Kidney Institute, United Kingdom	
PDOPPS Korea and Global		**Kook-Hwan Oh** Seoul National University Hospital, Korea	
Incremental PD		**Wonsuk An** Dong-A University Hospital, Korea	
Malnutrition in PD		**Seok Hui Kang** Yeungnam University Medical Center, Korea	

08:30-10:30	**KSN-ISN Joint Symposium** *A New Approach to Kidney Research*	KOR↔ENG	Room 3 (3F)
Chair(s)	**Beom Seok Kim** Severance Hospital, Korea **Sang Heon Song** Pusan National University Hospital, Korea		
High Protein Diet-Induced Glomerular Hyperfiltration		**Gang Jee Ko** Korea University Guro Hospital, Korea	
Clinical Dilemmas in Heart Failure and CKD Management		**Sunita Bavanandan** Hospital Kuala Lumpur, Malaysia	
Transform, Optimization of Animal Studies to Develop New Drugs		**Masaomi Nangaku** The University of Tokyo Graduate School of Medicine, Japan	
Single Cell Research Update in Kidney Disease		**Jihwan Park** Gwangju Institute of Science and Technology, Korea	

08:30-10:30	**Oral Communications 6** *Chronic Kidney Disease*	ENG	Room 4 (3F)
Chair(s)	**Ju Young Moon** Kyung Hee University Hospital at Gangdong, Korea **Sang-Woong Han** Hanyang University Guri Hospital, Korea		
OC6-01 ~ OC6-12			

10:40-12:40	**JSN-KSN Joint Symposium** *Hemodialysis 2*	KOR↔ENG	Room 1 (5F)
Chair(s)	**Hyeong-Cheon Park** Gangnam Severance Hospital, Korea **Masafumi Fukagawa** Tokai University School of Medicine, Japan		
Impact of Sarcopenia on Mortality in Patients Undergoing Hemodialysis		**Jong Hyun Jhee** Gangnam Severance Hospital, Korea	
National Quality Control of Hemodialysis in Korea; A Small Carrot and a Big Stick		**Soon Kil Kwon** Chungbuk National University College of Medicine, Korea	
Effect of Dialysis Modality on Chronic Inflammation and Oxidative Stress in Maintenance Hemodialysis Patients		**Minoru Satoh** Japan Organization of Occupational Health and Safety Kobe Rosai Hospital, Japan	
Japanese Reimbursement System for HD and Online HDF		**Yoshihiro Ota** Nagoya Memorial Hospital, Japan	

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

10:40-12:40	**Genetic Disease** *Conundrum of Thrombotic Microangiopathy*	KOR↔ENG	Room 2 (3F)
Chair(s)	**Young Joo Kwon** Korea University Guro Hospital, Korea **Hee Gyung Kang** Seoul National University Hospital, Korea		
Overview of Thrombotic Microangiopathy Including COVID-19		**Jinseok Kim** Severance Hospital, Korea	
Cytopathology in STEC/EHEC-HUS		**Myung Hyun Cho** Hallym University Sacred Heart Hospital, Korea	
Complementopathy in Atypical HUS/C3 Glomerulopathy		**Myung-Gyu Kim** Korea University Anam Hospital, Korea	
Clinical Use of Eculizumab and Ravulizumab		**Fadi Fakhouri** Nantes University Hospital Center, France	

10:40-12:40	**KSN-TSN-JSDT Joint Symposium** *Acute Kidney Injury*	KOR↔ENG	Room 3 (3F)
Chair(s)	**I-Wen Wu** Chang Gung Memorial Hospital, Taiwan **Nobuhito Hirawa** Yokohama City University, Japan **Sang-kyung Jo** Korea University Anam Hospital, Korea		
A Long Journey for Acute Kidney Injury Biomarkers		**Jungho Shin** Chung-Ang University College of Medicine, Korea	
Using Computer Science to Assist AKI Care - from E-alert to Artificial Intelligence		**Chih-Hsiang Chang** Chang Gung Memorial Hospital, Taiwan	
Prevention and Treatment of Acute Kidney Injury From the Viewpoint of Renal Congestion		**Masanori Abe** Nihon University, Japan	
Therapeutic Exosomes for Acute Kidney Injury		**Seonghun Kim** Yonsei University College of Dentistry, MET Life Sciences Co., Ltd., Korea	

10:40-12:40	**Future Medicine** *Hot Issue: AI in Nephrology*	KOR	Room 4 (3F)
Chair(s)	**Hyeon Seok Hwang** Kyung Hee University School of Medicine, Korea **Hajeong Lee** Seoul National University Hospital, Korea		
AI Application in Renal Pathology		**Heounjeong Go** Asan Medical Center, University of Ulsan College of Medicine, Korea	
Expert-Level Segmentation Using Deep Learning for Volumetry of ADPKD		**Kyong Tae Bae** University of Pittsburgh, United States	
Building Risk Prediction Models in Acute Kidney Injury		**Ji-Won Min** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea	
AI Application to Improve Hemodialysis Adequacy		**Hyung Woo Kim** Severance Hospital, Korea	

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

12:40-13:30	**Industry Symposium 7** Sponsored by FRESENIUS MEDICAL CARE		KOR	**Room 2 (3F)**
Chair(s)	**Gheun-Ho Kim**	Hanyang University Medical Center, Korea		
How to Initiate, Prescribe and Maintain High Volume HDF: Practical Simple Approach with 5008S			**Mi Jung Lee** CHA University, Korea	
12:40-13:30	**Industry Symposium 8** Sponsored by Baxter		KOR	**Room 3 (3F)**
Chair(s)	**Kwon Wook Joo**	Seoul National University Hospital, Korea		
Expanded HD: Closer Look at Clinical Effectiveness, Patient Reported and Health Economic Outcomes			**Hoon Young Choi** Gangnam Severance Hospital, Korea	
12:40-13:30	**Industry Symposium 9** Sponsored by BORYUNG		KOR	**Room 4 (3F)**
Chair(s)	**Sang-Youb Han**	Inje University Ilsan Paik Hospital, Korea		
Achieving Target blood pressure with triple-combination therapy, Dukarb Plus			**Ji-Won Min** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea	
13:30-14:00	**General Assembly**		KOR	**Room 1 (5F)**
14:00-14:50	**Plenary Lecture 3**		KOR↔ENG	**Room 2+3+4 (3F)**
Chair(s)	**Chun Soo Lim**	SMG-SNU Boramae Medical Center, Korea		
Oxygen Biology in the Kidney			**Masaomi Nangaku** The University of Tokyo Graduate School of Medicine, Japan	
15:00-17:00	**Fluid and Electrolyte** *Critical Care of Fluid-Electrolyte Disorders*		KOR↔ENG	**Room 1 (5F)**
Chair(s)	**Kwon Wook Joo** Seoul National University Hospital, Korea **Eun Hui Bae** Chonnam National University Medical School, Korea			
How to Assess Volume Status in Critically Ill Patients			**Sung Yoon Lim** Seoul National University Bundang Hospital, Korea	
Fluid Versus Vasopressor Therapy in Resuscitation			**Hye Ju Yeo** Pusan National University Yangsan Hospital, Korea	
Electrolyte Disturbances in the Neuro ICU			**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea	
Approaches to Acid-base Disorders: Traditional Versus Stewart			**Sungjin Chung** The Catholic University of Korea Yeouido St. Mary's Hospital, Korea	

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15:00-17:00	**Pediatric Nephrology** *Nephrotic Syndrome, from Childhood to Adulthood*	KOR↔ENG	Room 2 (3F)
Chair(s)	**Hee Gyung Kang** Seoul National University Hospital, Korea **Tae-Sun Ha** Chungbuk National University College of Medicine, Korea		
Optimizing the Corticosteroid Dose in Steroid-sensitive Nephrotic Syndrome		**Martin Christian** Nottingham University Hospital, United Kingdom	
Nephrotic Syndrome Requiring Other than Steroid; Coenzyme Q10 Nephropathy		**Eujin Park** Hallym University College of Medicine, Korea	
What We Learned from Nephrotic Syndrome Registry Studies and Its Implication for Treatment		**Susan Samuel** University of Calgary, Canada	
Childhood-nephrotic Syndrome in Adult Patients		**Jin-Soon Suh** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea	

15:00-17:00	**APSN-KSN CME Course 1** *New Drugs in Nephrology*	KOR↔ENG	Room 3 (3F)
Chair(s)	**Muh Geot Wong** University of Sydney, Australia **Hye Eun Yoon** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea		
Clinical Consideration in Using SGLT-2 Inhibitors		**Meg Jardine** University of Sydney, Australia	
Clinical Consideration in Using MRAs		**Yaerim Kim** Keimyung University School of Medicine, Korea	
Pleotropic Effects of HIF-PHIs, Are There Clinical Relevant		**Yu-Hsiang Chou** National Taiwan University, Taiwan	
Renoprotective Effect of ET Inhibitor		**Se Won Oh** Korea University Anam Hospital, Korea	

15:00-18:00	**KDIGO-KSN Joint Symposium** *Anemia in CKD*	ENG	Room 4 (3F)
Chair(s)	**Sung Gyun Kim** Hallym University Sacred Heart Hospital, Korea **Kyung Pyo Kang** Jeonbuk National University Medical School, Korea		
The Evolution of Evidence Generation in CKD-Anemia: A History of Agents and Trial Designs		**Wolfgang Winkelmayer** Baylor College of Medicine, United States	
Anemia in Chronic Kidney Disease Patients: Result From the Know-CKD		**Kook-Hwan Oh** Seoul National University Hospital, Korea	
HIF-PHI Trials in CKD Non-dialysis and Dialysis: What Do the Data Really Show?		**David Wheeler** University College London, United Kingdom	
Appropriate Use of HIF-PH inhibitor in Korean with CKD		**Sung Gyun Kim** Hallym University Sacred Heart Hospital, Korea	
The Evolving Roles of Iron Treatment, ESAs, and HIF-PHIs Towards Successful Anemia Treatment		**Elaine Ku** University of California, San Francisco, United States	
Treatment of Anemia: Beyond Erythropoietin in Korea 2022		**Jong Hyun Jhee** Gangnam Severance Hospital, Korea	

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17:10-19:10	**Geriatric Nephrology** *What is Aging? One Step Closer to the Super-Aged Society*	KOR↔ENG	Room 1 (5F)
Chair(s)	**Soon Hyo Kwon** Soonchunhyang University College of Medicine, Korea **Sung Joon Shin** Dongguk University Ilsan Hospital, Korea		
What Is Aging?; Is Aging a Natural Condition or a Disease?		**Hidenori Arai** National Center for Geriatrics and Gerontology, Japan	
Aging and Kidney Disease		**Seo Rin Kim** Pusan National University Yangsan Hospital, Korea	
Recent Researches on Anti-aging Interventions		**Eun-Soo Kwon** Korea Research Institute of Bioscience and Biotechnology, Korea	
Medical Service for Healthy Aging		**Reshma A. Merchant** National University Hospital, Singapore	

17:10-19:10	**Glomerulonephritis** *Beyond the KDIGO 2021 CPG for the Management of Glomerular Diseases*	KOR↔ENG	Room 2 (3F)
Chair(s)	**Eun Young Seong** Pusan National University School of Medicine, Korea **Kyeog Hwan Jeong** Kyung Hee University Medical Center, Korea		
The Key Advances in the Pathogenesis of IgA Nephropathy		**Jonathan Barratt** University of Leicester, United Kingdom	
The Key Updates in the 2021 KDIGO Guideline for IgA Nephropathy and New Therapies in for IgA Nephropathy		**Hong Zhang** Peking University First Hospital, China	
Beyond Mycophenolate and Cyclophosphamide for Lupus Nephritis		**Chang Hee Suh** Ajou University Hospital, Korea	
New Pathophysiology and Clinical Approach in Tubulointerstitial Nephritis		**Seung Seok Han** Seoul National University Hospital, Korea	

17:10-19:10	**APSN-KSN CME Course 2** *Advances in Glomerulonephritis*	KOR↔ENG	Room 3 (3F)
Chair(s)	**Hyeong-Cheon Park** Gangnam Severance Hospital, Korea **Ho Jun Chin** Seoul National University Bundang Hospital, Korea		
Advances in IgAN		**Tae Ryom Oh** Chonnam National University Hospital, Korea	
Advances in Membranous Nephropathy		**Vivek Jha** The George Institute for Global Health, India	
Advances in aHUS/TMA		**Eunjeong Kang** Ewha Womans University Medical Center, Korea	
Advances in Lupus Nephritis		**Kah Mean Thong** Hospital Ipoh, Malaysia	

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

Day 4 May 29 (Sunday)

08:30-10:30 Nephrology Board Review Course 1
ESRD, Dialysis

KOR Room 1 (5F)

Chair(s) **Seungyeup Han** Keimyung University School of Medicine, Korea

Dialysis Adequacy Update (HD/PD Adequacy)	**Kyubok Jin** Keimyung University Dongsan Medical Center, Korea
Management of Secondary Hyperparathyroidism in Dialysis Patients: Case Oriented	**Yu Ho Lee** Bundang CHA General Hospital, Korea
30 Incremental, Hybrid, and Extended Dialysis	**Hyo-Wook Gil** Soonchunhyang University Cheonan Hospital, Korea
Anemia Management in Dialysis Patients: Target Ferritin and Hemoglobin	**Seo Rin Kim** Pusan National University Yangsan Hospital, Korea

08:30-10:30 Dialysis Specialist Physician Course 1
What a Nephrologist Should Know about Kidney Transplantation

KOR Room 2 (3F)

Chair(s) **Rho Won Chun** 전로원 내과의원, Korea

Education on Kidney Transplantation for Patients Initiating Dialysis	**Hajeong Lee** Seoul National University Hospital, Korea
Donor Evaluation and Follow Up in Kidney Transplantation	**Ji Eun Kim** Korea University Guro Hospital, Korea
Recipient Evaluation and Follow Up in Kidney Transplantation	**Hyeon Seok Hwang** Kyung Hee University School of Medicine, Korea
Management of Patients with a Failed Kidney Transplant	**Do Hyoung Kim** Kangnam Sacred Heart Hospital, Korea

08:30-10:30 Dialysis Nurse Course 1

KOR Room 3 (3F)

Chair(s) **Young-Ki Lee** Kangnam Sacred Heart Hospital, Korea
Jinhee Han Asan Medical Center, University of Ulsan College of Medicine, Korea

복막투석 담당 간호사의 역할 (복막투석 재택관리사업)	**Young-Ki Lee** Kangnam Sacred Heart Hospital, Korea
Basic Principles of Peritoneal Dialysis	**Hyo Jin Kim** Pusan National University Hospital, Korea
Management of Fluid and Electrolyte Disturbances in Peritoneal Dialysis Patients	**Kyeong Min Kim** Eulji University Hospital, Korea
Management of Complications of Peritoneal Dialysis	**Haeri Kim** Chungnam National University Sejong Hospital, Korea

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08:30-10:30 KSN-KSH Joint Symposium

Intensive BP Control and Kidney in the Era of SPRINT

KOR Room 4 (3F)

Chair(s) **Jinho Shin** Hanyang University Medical Center, Korea
Chul Woo Yang The Catholic University of Korea, Seoul St. Mary's Hospital, Korea

Impact of Intensive BP Lowering on Cardiovascular and Renal Outcomes	**Hack-Lyoung Kim** SMG-SNU Boramae Medical Center, Korea
Updated Guidelines on Blood Pressure Control in Patients with Kidney Diseases	**Seung Hyeok Han** Severance Hospital, Korea
Out-Of-Office BP Corresponding to 120 mmHg in Intensive BP Control	**Sung Ha Park** Severance Hospital, Korea
Masked Uncontrolled Hypertension in CKD in Intensive BP Control	**Eunsil Koh** The Catholic University of Korea, Yeouido St. Mary's Hospital, Korea

10:40-12:40 Nephrology Board Review Course 2

ESRD, Dialysis

KOR Room 1 (5F)

Chair(s) **Seong Eun Kim** Dong-A University Hospital, Korea

Clinical Implications and Prescriptions of On-Line HDF	**Jin Sug Kim** Kyung Hee University Medical Center, Korea
Prescription of Automated Peritoneal Dialysis	**Kyung Pyo Kang** Jeonbuk National University Medical School, Korea
Evaluation and Management of Av Access as a Nephrologist	**Hyung Seok Lee** Hallym University Sacred Heart Hospital, Korea
Non-infectious Peritoneal Dialysis Complications	**Kyung Sun Park** Ulsan University Hospital, Korea

10:40-12:40 Dialysis Specialist Physician Course 2

Miscellaneous Issues in Hemodialysis Patients

KOR Room 2 (3F)

Chair(s) **Seung Hwan Sohn** Dr. Sohn's Hemodialysis Center, Korea

Artery Disease in ESRD Patients: Central / Peripheral	**Sang Min Kim** Chungbuk National University Hospital, Korea
CKD-MBD Management: Fracture Risk Evaluation & Intervention	**Jang Han Lee** Bundang Jesaeng General Hospital, Korea
Blood Pressure in CKD/ESRD: 2021 Update	**Hye Min Choi** Myongji Hospital, Korea
Iron Treatment in CKD/ESRD Patients	**Jae Yoon Park** Dongguk University Ilsan Hospital, Korea

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

10:40-12:40	**Dialysis Nurse Course 2**	KOR	Room 3 (3F)
Chair(s)	**Joon Ho Song** Inha University Hospital, Korea **Seon Ho Ahn** Wonkwang University School of Medicine, Korea		
Dialysis Water Quality Control		**Samel Park** Soonchunhyang University College of Medicine, Korea	
Nutritional Support in HD Patients		**Hyeongwan Kim** Jeonbuk National University Hospital, Korea	
Management of CKD-MBD		**Jin Joo Cha** Korea University Ansan Hospital, Korea	
Management of Osteoporosis in HD Patients		**Hyon-Seung Yi** Chungnam National University Hospital, Korea	
10:40-12:40	**KSN-KES Joint Symposium**	KOR	Room 4 (3F)
Chair(s)	**Yoon Sok Chung** Ajou University School of Medicine, Korea **So-Young Lee** Bundang CHA General Hospital, Korea		
갑상선질환의 진단과 치료의 최신지견		**Yoon Young Cho** Soonchunhyang University College of Medicine, Korea	
Primary Aldosteronism 진단과 치료의 최신지견		**Jung Soo Lim** Yonsei University Wonju College of Medicine, Korea	
Dyslipidemia Treatment in CKD		**So-Young Lee** Bundang CHA General Hospital, Korea	
Osteoporosis Treatment in CKD		**Kipyo Kim** Inha University Hospital, Korea	
12:40-13:30	**Industry Symposium 10** Sponsored by SK chemicals	KOR	Room 2 (3F)
Chair(s)	**Jung Pyo Lee** Seoul National University College of Medicine, Korea		
투석환자의 가려움증 치료		**Hye One Kim** Kangnam Sacred Heart Hospital	
12:40-13:30	**Industry Symposium 11** Sponsored by Otsuka	KOR	Room 3 (3F)
Chair(s)	**Yun Kyu Oh** SMG-SNU Boramae Medical Center, Korea		
다낭신의 진단 및 치료: 선별검사부터 톨밥탄 치료까지		**Hayne Cho Park** Kangnam Sacred Heart Hospital	
12:40-13:30	**Industry Symposium 12** Sponsored by inno.N innovate New & Next	KOR	Room 4 (3F)
Chair(s)	**Duk-Hee Kang** Ewha Womans University Medical Center, Korea		
Optimal Dosage of Kremezin in CKD		**Yong Chul Kim** Seoul National University Hospital, Korea	

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13:30-15:30 KSN-KSCN Joint Symposium

쿠킹클래스와 함께하는, 투석 환자에서 건강하게 잘 먹기 - 올바른 단백 섭취

KOR Room 1 (5F)

Chair(s)	Eun Lee, Konkuk University Medical Center, Korea Jung Kook Wi, Shinwoo Clinic, Korea
투석 환자에서 단백 섭취와 단백질-열량 영양실조 (PEW)	Sung Woo Lee, Uijeongbu Eulji Medical Center, Korea
투석 환자에서 올바른 단백 섭취	Jeeyeon Kim, The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea
시연: 투석 환자에서 건강하게 잘먹는 식사 만들기	Woo Jeong Kim, Gangnam Severance Hospital, Korea Eun Jeong Choi, Hanyang Woman's, Korea

13:30-15:30 KORDS Report / Dialysis Center Accreditation

KOR Room 2 (3F)

Chair(s)	Jongha Park, Ulsan University Hospital, University of Ulsan College of Medicine, Korea Ki Ryang Na, Chungnam National University Hospital, Korea
Global Comparison of Nationwide Renal Registry Data	Jongha Park, Ulsan University Hospital, University of Ulsan College of Medicine, Korea
개원가 입장에서 바라본 등록사업	Chang-Yun Yoon, 윤영석 내과의원, Korea
2022년 인공신장실 인증평가 보고	Young-Ki Lee, Kangnam Sacred Heart Hospital, Korea
적정성 평가의 과거, 현재, 그리고 미래	Jin Yong Lee, Health Insurance Review and Assessment Service, Korea
투석전문의의 현재와 미래	Won Min Hwang, College of Medicine, Konyang University, Korea

13:30-15:30 New Field in Nephrology

KOR Room 3 (3F)

Chair(s)	Seung Hyeok Han, Severance Hospital, Korea Jung Eun Lee, Samsung Medical Center, Korea
Arteriovenous Fistula Doppler Ultrasonogram and Access Surveillance	Hyung Woo Kim, Severance Hospital, Korea
Ultrasonogram for Nephrologists	Chang Seong Kim, Chonnam National University Hospital, Korea
Intensive Care Nephrology	Jeonghwan Lee, SMG-SNU Boramae Medical Center, Korea
Onconephrology	Jae Wook Lee, National Cancer Center, Korea

13:30-15:30 National Projects in Nephrology

KOR Room 4 (3F)

Chair(s)	Tae-Hyun Yoo, Yonsei University College of Medicine, Korea Yong Kyun Kim, The Catholic University of Korea, St. Vincent's Hospital, Korea
콩팥병 공통데이터모델 연구회 국가과제	Ho Seok Koo, Inje University Seoul Paik Hospital, Korea
신장이식환자에서 거대세포바이러스 예방요법의 효과분석 연구	Kyeog Hwan Jeong, Kyung Hee University Medical Center, Korea
Genetic Identification of Inherited Cystic Kidney Diseases for Implementing Precision Medicine	Hayne Cho Park, Kangnam Sacred Heart Hospital, Korea

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

15:40-17:40 Ethics Education — KOR — Room 1 (5F)

Chair(s): **Seong Eun Kim** (Dong-A University Hospital, Korea), **Sung Hyun Son** (Hanseo Hospital, Korea)

인공지능(AI) 시대의 의료 윤리 문제	**Kwang Mo Yang**, Samsung Medical Center, Korea
의학전문직업성에 기반한 자율규제	**Ducksun Ahn**, Korea University College of Medicine, Korea
의료분쟁 감정 사안에 대한 법률적 해석	**Yeon Hee Kim**, 법무법인 의성, Korea
인공신장실에서의 윤리적 문제	**Sang Wook Kim**, Gwangmyeong Soo Medical Clinic, Korea

15:40-17:40 Kidney Academy — KOR — Room 2 (3F)

Chair(s): **Bum Soon Choi** (The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea), **Sung Ku Lee** (정든내과, Korea)

Application of Novel Anemia Treatment in CKD	**Jwa-Kyung Kim**, Hallym University Sacred Heart Hospital, Korea
Recent Advances to Control Hyperphosphatemia	**Jin Ho Hwang**, Chung-Ang University Hospital, Korea
New Treatment Strategies for Diabetic Nephropathy	**Yohan Park**, Konyang University Hospital, Korea
Drug Development of IgA Nephropathy and FSGS	**Jae Yoon Park**, Dongguk University Ilsan Hospital, Korea

15:40-17:40 KSN Cooperative Study — KOR — Room 3 (3F)

Chair(s): **Kook-Hwan Oh** (Seoul National University Hospital, Korea), **Sang Heon Song** (Pusan National University Hospital, Korea)

[2020년 협동연구과제] 근거 중심의 고령 만성콩팥병 환자 진료지침: 3년차 보고	**Yu Ah Hong**, The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea
[2020년 한국보건의료연구원 과제/2021 협동연구과제] 만성콩팥병 환자 투석방법 선택을 위한 공동의사결정 임상시험 (SDM-ART): 2년차 보고	**Se joong Kim**, Seoul National University Bundang Hospital, Korea
[2021년 협동연구과제] 인공지능 기반 임상-병리 통합 IgA 신장염 예후 예측 모델 개발	**Ha jeong Lee**, Seoul National University Hospital, Korea
[2021년 한국보건의료연구원 과제] A Pragmatic Randomized Clinical Trial: Twice vs Thrice Weekly Incident Hemodialysis in Elderly Patients (PRIDE)	**Soon Hyo Kwon**, Soonchunhyang University College of Medicine, Korea

15:40-17:40 Oral Communications 7
Dialysis

ENG — Room 4 (3F)

Chair(s): **Jung Hwan Park** (Konkuk University School of Medicine, Korea), **Dae Eun Choi** (Chungnam National University Hospital, Korea)

OC7-01 ~ OC7-12

Day 1 May 26 (Thursday)

08:30-10:30 **Oral Communications 1** Acute Kidney Injury — ENG — Room 4 (3F)

Presentation No.	Title	Presenting Author
OC1-01	Deep learning-based prediction model for postoperative AKI in major non-cardiac surgeries	**Sehoon Park** Seoul National University Hospital, Korea
OC1-02	Long term outcome of acute kidney injury: New-onset comorbidities and survival	**Jihyun Yang** Kangbuk Samsung Hospital, Korea
OC1-03	Platelet-to-lymphocyte ratio is associated with in-hospital mortality in critically ill patients with acute kidney injury requiring continuous renal replacement therapy	**You Hyun Jeon** Kyungpook National University Hospital, Korea
OC1-04	Comparison of incidence of acute kidney injury, chronic kidney disease and end-stage renal disease between atrial fibrillation and atrial flutter: THE GOOD, THE BAD, THE UGLY	**Wei Syun Hu** China Medical University Hospital, Taiwan
OC1-05	The effects of sarcopenia on mortality of patients with acute kidney injury requiring continuous renal replacement therapy	**Jangwook Lee** Dongguk University Ilsan Hospital, Korea
OC1-06	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
OC1-07	Urinary cytokines/chemokines for differential diagnosis of acute interstitial nephritis and acute tubular necrosis	**Song In Baeg** Myongji Hospital, Korea
OC1-08	Tamsulosin mediate ureter smooth muscle contraction by increasing potassium current: An in-silico study	**Chitaranjan Mahapatra** University of California San Francisco, United States
OC1-09	Impact of timing and stage of acute kidney injury on clinical outcome in patients with COVID-19	**Seong Geun Kim** Seoul National University College of Medicine, Korea
OC1-10	Early versus standard initiation of continuous renal replacement therapy (CRRT) in patients undergoing aortic surgery	**Eun Ji Yang** Gangnam Severance Hospital, Yonsei University College of Medicine, Korea
OC1-11	Glycosylated albumin ameliorates kidney injury through improvement of mitochondrial function	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
OC1-12	The role of the circadian clock system in the transition from acute kidney injury to chronic kidney disease	**Yina Fang** Korea University Anam Hospital, Korea

Day 1 May 26 (Thursday)

10:40-12:40 **Oral Communications 2** Electrolyte, Hypertension and New Fields — ENG — Room 4 (3F)

Presentation No.	Title	Presenting Author
OC2-01	Impact of metabolic acidosis on all-cause mortality in patients with COVID-19	**Yaerim Kim** Keimyung University School of Medicine, Korea
OC2-02	Airborne particulate matter exposure induces renal tubular cell injury in vitro: The role of vitamin D signaling and the renin angiotensin system	**Hyung Eun Yim** Korea University Ansan Hospital, Korea
OC2-03	The risk of depression, suicidal plan, and suicidal attempt in chronic kidney disease: Results from the Korean National Health and Nutrition Examination Survey 2013-2018	**Ga Yeong Song** Wonju Severance Christian Hospital, Korea
OC2-04	Anti-inflammatory effects of zeaxanthin in pulmonary artery hypertension model of rat	**Rahul Kumar** Jagannath Kishore College, India
OC2-05	Use of angiotensin receptor neprilysin inhibitor in ESRD patients with reduced cardiac ejection fraction: Real-world experience from a single center	**Shina Lee** Ewha Womans University Mokdong Hospital, Korea
OC2-06	Cellular senescence in perirenal adipose tissue is associated with exacerbation of renal ischemia-reperfusion injury in diet-induced obese mice	**Seo Rin Kim** Pusan National University Yangsan Hospital, Korea
OC2-07	Association of nocturnal heart rate dipping with nocturnal systolic blood pressure dipping during pre-living kidney donation period	**Ekamol Tantisattamo** University of California Irvine School of Medicine, United States
OC2-08	Antibiotics-induced intestinal microbiota depletion can attenuate acute kidney injury transition to chronic kidney disease in mice unilateral ischemia-reperfusion injury model	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
OC2-09	Study of vitamin D levels, vascular risk factors and inflammation in type 2 diabetic patients	**Vikas Sharma** Sarojini Naidu Medical College, India
OC2-10	Development and validation of deep learning algorithm for detecting hyperkalemia based on electrocardiogram	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
OC2-11	Anti-atherosclerotic effects of cinnamon bark extract in cholesterol diet induced hyperlipidemia in rats	**Rohit Kumar** Memorial Institute of Engineering and Technology, India

Day 1 May 26 (Thursday)

13:30-15:30 **Oral Communications 3** Glomerulonephritis — ENG — Room 4 (3F)

Presentation No.	Title	Presenting Author
OC3-01	Deep learning-based prediction model for prognosis of IgA nephropathy	**Sehoon Park** Seoul National University Hospital, Korea
OC3-02	The difference of activation pattern of complement system between pediatric and adult lupus nephritis	**Minji Park** Kyungpook National University Hospital, Korea
OC3-03	Higher IL-12 and IL-23 levels and increased P-glycoprotein expression drive the transition of Th17 cells to pathogenic IFN-* producing Th17 cells in refractory nephrotic syndrome	**Akhilesh Jaiswal** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
OC3-04	Proteomic analysis of exosomes from human tubular epithelial cells with suppressed TG2 activity under fibrotic injury	**Kyuhyeon Kim** Seoul National University Hospital, Korea
OC3-05	Genetic variants in MIR3142HG contribute to the predisposition of IgA nephropathy in a Chinese Han population	**Jiali Wei** Hainan Affiliated Hospital of Hainan Medical University, China
OC3-06	Inhibition of RNA methylation signaling pathway mediated by METTL3 attenuates kidney fibrosis	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
OC3-07	Monocyte-derived circulating microparticles and glomerular M2 macrophage infiltration in IgAN	**Snigdha Singh** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
OC3-08	Cystamine inhibits TGFβ induced changes in podocytes using metabolomic analysis	**Jong Joo Moon** Seoul National University Biomedical Research Institute, Korea
OC3-09	Transglutaminase 2 regulates mesangial IgA1 deposition through RhoA-mediated vesicle-trafficking pathway in IgAN	**Shaozhen Feng** The First Affiliated Hospital, Sun Yat-sen University, China
OC3-10	Potential of Tc-99m sestamibi dynamic renal scan and quantitative SPECT/CT for the evaluation of renal mitochondrial dysfunction: A preliminary study	**Soo Bin Park** Soonchunhyang University Seoul Hospital, Korea
OC3-11	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 Affiliated Hospital of Hainan Medical University, China
OC3-12	The effects of 12 weeks contact-free combined exercise program on health fitness, quality of life, physical activity and kidney function in pediatric patients with chronic kidney disease	**Hyeonju Lee** Seoul National University Hospital, Korea

Day 2 May 27 (Friday)

10:40-12:40 **Oral Communications 4** Pediatric/Geriatric/Big Data **ENG** **Room 4 (3F)**

Presentation No.	Title	Presenting Author
OC4-01	Feasibility assessment of catheter complications in peritoneal dialysis patients using a common data model	**Soo Jeong Choi** Soonchunhyang University Bucheon Hospital, Korea
OC4-02	Quest of biomarkers to predict the progression of chronic kidney diseases in children with CAKUT of Korea; A report from KNOW-Ped CKD	**Ji Hyun Kim** Seoul National University Bundang Hospital, Korea
OC4-03	Selective application of Initial steroid regimen in idiopathic steroid-sensitive nephrotic syndrome: The preliminary report of a prospective-multicenter study	**Minji Park** Kyungpook National University Hospital, Korea
OC4-04	Impact of obesity on renal function in the elderly: Results from the geriatric cohort database of the NHIS, 2009~2015	**Eunjin Bae** Gyeongsang National University Changwon Hospital, Korea
OC4-05	Is Neutrophil/Lymphocyte ratio associated with glomerular filtration rate and proteinuria in older adults with non-dialysis chronic kidney disease?	**Aygul Celtik** School of Medicine, Ege University, Turkey
OC4-06	Calorie restriction reprograms single-cell transcriptional landscape of aging in mouse kidneys	**Su Woong Jung** Kyung Hee University Hospital at Gangdong, Korea
OC4-07	Air pollution, genetic factors, and the risk of incident chronic kidney disease: A prospective study of polygenic risk score analysis in the UK Biobank	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
OC4-08	Effect of metabolically healthy obesity on cardiovascular outcomes and progression to end-stage renal disease in chronic kidney disease	**Shin Yeong Kang** Kyung Hee University Medical Center, Korea
OC4-09	Epigenetic regulation: Does HDAC2 plays role in drug resistance via regulation of P-gp and MRP-1	**Rashmika Singh** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India
OC4-10	Ceria-zirconia nanoparticles reduce intracellular globotriaosylceramide accumulation and attenuate kidney injury by enhancing the autophagy flux in cellular and animal models of Fabry disease	**Se Hee Yoon** College of Medicine, Konyang University, Korea
OC4-11	Factors associated with severity of polycystic liver in the patients with autosomal dominant polycystic kidney disease: Results from inherited cystic kidney disease genetic cohort study	**Hayne Cho Park** Kangnam Sacred Heart Hospital, Korea
OC4-12	Development of CRISPR/Cas9 therapeutics targeting A4GALT using patient derived kidney organoids model of Fabry disease	**Sheng Cui** School of Medicine, The Catholic University of Korea, Korea

Day 2 May 27 (Friday)

14:40-16:40 **Oral Communications 5** Transplantation — ENG — Room 4 (3F)

Presentation No.	Title	Presenting Author
OC5-01	Effect of dual inhibition of DPP4 and SGLT2 on tacrolimus-induced diabetes mellitus and nephrotoxicity in rat model	**Eun Jeong Ko** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC5-02	Outcomes of ABO-incompatible living donor kidney transplantation compared to waiting or deceased donor kidney transplantation	**Tai Yeon Koo** Seongnam Citizens Medical Center, Korea
OC5-03	Risk of new-onset atrial fibrillation among heart, kidney and liver transplant recipients: Where are we and where are we going?	**Wei Syun Hu** China Medical University Hospital, Taiwan
OC5-04	Anti-thymocyte globulin versus basiliximab induction for kidney transplantation in elderly patients: Matched analysis with Korean multicentric registry	**Jun Young Lee** Wonju Severance Christian Hospital, Korea
OC5-05	Prospective study to evaluate the effectiveness of donor-derived cell-free DNA for early diagnosis of acute rejection in renal transplant recipients	**Hyung Duk Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC5-06	Clinical efficacy and safety of denosumab in kidney transplant recipients with osteoporosis	**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea
OC5-07	Transition of metabolic dysfunction after kidney transplantation and its association with transplant outcomes: A nationwide prospective cohort study	**Yu Ho Lee** Bundang CHA General Hospital, Korea
OC5-08	Combined analysis of HLA Class II Eplet mismatch and tacrolimus levels for the prediction of de novo donor specific antibody development in kidney transplant recipients	**Ji Won Min** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea
OC5-09	Short-term predictive models for post-kidney transplant diabetes mellitus using machine learning approach: Preliminary data	**Seoyoung Choi** Seoul National University College of Medicine, Korea
OC5-10	A study of clinical presentation and outcome of Covid-19 infection in kidney transplant recipients	**Manzoor Parry** Sher I Kashmir Institute of Medical Sciences, India
OC5-11	Clinical trial of allogeneic mesenchymal stem cell therapy for chronic active antibody-mediated rejection in kidney transplant recipients	**Hyung Duk Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC5-12	Current status of cytomegalovirus prophylaxis and its clinical impact in kidney transplant recipients in Korea: The Korean organ transplantation registry study	**Jin Sug Kim** Kyung Hee University School of Medicine, Korea

Day 3 May 28 (Saturday)

08:30-10:30 **Oral Communications 6** Chronic Kidney Diseases **ENG** **Room 4 (3F)**

Presentation No.	Title	Presenting Author
OC6-01	Gut microbial genes and metabolism for methionine and branched-chain amino acids in diabetic nephropathy	**Ji Eun Kim** Korea University Guro Hospital, Korea
OC6-02	Non-invasive biomarker using urinary exosome miRNA that reflects pathologic features of patients with diabetic kidney diseases	**Dae Kyu Kim** Kyung Hee University Hospital at Gangdong, Korea
OC6-03	Curcumin blocks high glucose-induced podocyte injury via RIPK3 -dependent pathway	**Seong Woo Lee** Soonchunhyang University College of Medicine, Korea
OC6-04	Periostin deficiency attenuates kidney fibrosis and pancreatic β-cell dysfunction though reducing tenascin C under diabetic conditions	**Ara Cho** Seoul National University College of Medicine, Korea
OC6-05	Effects of Zinc Oxide Nanoparticles on oxidative stress and renal function in fat-fed and streptozotocin-treated rats	**Pardeep Kumar** FH Medical College and Hospital, India
OC6-06	Similar risk of kidney function decline between tenofovir alafenamide and besifovir dipivoxil maleate in chronic hepatitis B	**Chan-Young Jung** Severance Hospital, Korea
OC6-07	Urinary sodium-to-potassium ratio and CKD progression in non-dialysis-dependent CKD patients: Results from the KNOW-CKD study	**Donghyuk Kang** Korea University Guro Hospital, Korea
OC6-08	Long-term exposure to high perceived temperature and risk for mortality among CKD patients	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
OC6-09	SGLT2 inhibitor reduces urinary mitochondrial DNA in chronic kidney disease patients with or without type 2 diabetes mellitus	**Haekyung Lee** Soonchunhyang University Seoul Hospital, Korea
OC6-10	Age-specific estimated glomerular filtration rate and outcomes: Insights from the KNOW-CKD cohort	**Ji Hye Kim** Seoul National University Hospital, Korea
OC6-11	Development and validation of deep learning algorithm for evaluating kidney function based on electrocardiogram	**Jung Nam An** Hallym University Sacred Heart Hospital, Korea
OC6-12	Rosuvastatin inhibits tubulointerstitial fibrosis via activating HOX13-BMP-7 pathway	**Donghwan Oh** Gangnam Severance Hospital, Korea

Day 4 May 29 (Sunday)

15:40-17:40 **Oral Communications 7** Dialysis — ENG — Room 4 (3F)

Presentation No.	Title	Presenting Author
OC7-01	Effect of Plasminogen Activator Inhibitor-1 (PAI-1) on phenotype transition of human peritoneal Mesothelial Cells (MCs)	**Dal-Ah Kim** Ewha Womans University Medical Center, Korea
OC7-02	Fasting blood glucose level and all-cause mortality in peritoneal dialysis patients	**Jongho Kim** Kyung Hee University Medical Center, Korea
OC7-03	Synergy of selective inhibitor of PDE-5 and 5-HT2B receptor: A potent anti-fibrotic strategy for abrogating fibrotic potential of peritoneal fibroblasts in PD patients	**Saurabh Chaturvedi** GSVM Medical College, India
OC7-04	Cross-talk between Mesothelial Cells (MCs) and adipocytes (ACs) as a trigger for peritoneal fibrosis in Peritoneal Dialysis (PD)	**Ye Rim Her** Ewha Womans University Medical Center, Korea
OC7-05	Combined impact of mean and variability of non-HDL-Cholesterol on cardiovascular risk in patients undergoing hemodialysis	**Hanbi Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
OC7-06	Circulating follistatin-like protein-1 levels predicts the risk of cardiovascular events and death in hemodialysis patients	**Dae Kyu Kim** Kyung Hee University Hospital at Gangdong, Korea
OC7-07	Elevated serum alkaline phosphatase levels and risk of all-cause mortality in dialysis patients	**Md Salman Hussain** Jamia Hamdard, India
OC7-08	A risk prediction for early-peak mortality in Korean elderly hemodialysis patients: Data from a multicenter cohort study	**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea
OC7-09	Fasting blood glucose level and all-cause mortality in hemodialysis patients	**Soo-Young Yoon** Kyung Hee University Medical Center, Korea
OC7-10	Femoral vein tunneled-cuffed catheters in a single tertiary teaching hospital: A five years retrospective study in Malaysia	**Suek Xuan Pon** University Malaya, Malaysia
OC7-11	Severe acute respiratory syndrome coronavirus 2 antibody response after heterologous immunizations with ChAdOx1/BNT162b2 in end-stage renal disease patients on hemodialysis	**Dae Kyu Kim** Kyung Hee University Hospital at Gangdong, Korea
OC7-12	Strict blood pressure control was associated with better survival in Korean hemodialysis patients, but not in peritoneal dialysis	**Joo Kyung Lee** Korea University Guro Hospital, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
1010	Low-osmolar versus Iso-osmolar contrast media on the risk of contrast-induced acute kidney injury: A propensity score matched study	**Taeho Lee** Gachon University Gil Medical Center, Korea
1015	Characteristics and outcomes of hospitalized Covid-19 patients with acute kidney injury	**Alrik Earle Escudero** Makati Medical Center, Philippines
1017	Effect of ventricular tachycardia on the outcomes of patients undergoing continuous renal replacement therapy due to acute kidney injury	**Seong Geun Kim** Seoul National University Hospital, Korea
1025	Comparative prognostic accuracy of four prognostic scores for hospital mortality in dialysis requiring acute kidney injury patients (AKI-D) in an intensive care unit in a tertiary hospital in Cebu city	**Kirbe Labarcon** Chong Hua Hospital Cebu, Philippines
1053	Clinical characteristics of acute kidney injury in patients with phytolaccaceae ingestion	**A Young Cho** Presbyterian Medical Center, Korea
1063	A retrospective study of risk factors for the circuit lifetime of continuous renal replacement therapy	**Jae Seok Kim** Yonsei University Wonju College of Medicine, Korea
1071	ANCA-associated vasculitis and deep vein thrombosis after Pfizer-BioNTech COVID-19 vaccine	**Yeon Hee Lee** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
1079	Rrt-mortality score as a tool for predicting death in severe acute kidney injury patients who receiving renal replacement therapy: Preliminary result from sea-rrt registry study	**Theerapon Sukmark** Thungsong hospital, Thailand
1080	β-Hydroxybutyrate, a ketone body, ameliorate the sepsis-induced acute kidney injury	**Minjeong Kim** Pusan National University Yangsan Hospital, Korea
1084	Therapeutic benefit of fraxin on kidney injury: An phytopharmaceutical approach in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
1085	Biological effect of chrysosplenetin on bone loss: Therapeutic benefit and pharmacological activities	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
1088	Hyperlactatemia as a predictor of mortality in patients undergoing continuous renal replacement therapy due to acute kidney injury	**Seong Geun Kim** Seoul National University College of Medicine, Korea
1093	Consultation to nephrospecialist after starting continuous renal replacement therapy is related with improved survival	**Jinwoo Lee** Seoul National University Hospital, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
1114	A case report of fungus ball presenting as a rare cause of acute renal failure due to obstructive uropathy	**Sung Jo Hwang** Soonchunhyang University Cheonan Hospital, Korea
1115	Cardiorenal consequences in the hospitalized patients with COVID-19 infection	**Soie Kwon** Seoul National University Hospital, Korea
1118	Acute kidney injury and kidney damage in COVID-19 patients	**Jae Wan Jeon** Chungnam National University Sejong Hospital, Korea
1122	Incidence and impact of acute kidney injury on patients admitted to intensive care unit	**Haider Ali Khan** Combined Military Hospital (CMH) Peshawar, Pakistan
1134	The relationship between the occurrence of RCIN and changes in estimated glomerular filtration rate (eGFR) level in long term follow up	**Woo Ram Bae** Gyeongsang National University Changwon Hospital, Korea
1137	Impact of acute kidney disease on the incidence of acute kidney injury in the intensive care unit	**Harin Rhee** Busan National University Hospital, Korea
1139	Clinical significance of serum albumin monitoring during continuous renal replacement therapy	**Harin Rhee** Pusan National University Hospital, Korea
1147	DICAM protects HK-2 cell injury by reducing inflammation and apoptosis	**Yu Kyung Chung** Kyungpook National University Hospital, Korea
1168	Validation of the prediction model for successful discontinuation of continuous renal replacement therapy	**Junseok Jeon** Samsung Medical Center, Korea
1172	Diuretic therapy is helpful for the successful discontinuation of continuous renal replacement therapy – multicenter retrospective cohort study	**Junseok Jeon** Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea
1178	Cyclo(-His-Pro) protects against cisplatin-induced acute kidney injury by alleviating oxidative stress	**Hoe-Yune Jung** NovMetaPharma Co., Ltd. School of Interdisciplinary Bioscience and Bioengineering, Pohang University of Science and Technology (POSTECH), Korea
1180	Effects of poly (ADP-Ribose) polymerase inhibitor treatment on the repair after renal ischemia-reperfusion injury	**Junseok Jeon** Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea
1181	The effects of dietary fat and protein on the repair of ischemic acute kidney injury	**Junseok Jeon** Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
1191	Urinary cytokines/chemokines as noninvasive biomarkers predicting renal outcome in crescentic glomerulonephritis	**Hojin Jeon** Samsung Medical Center, Korea
1233	N-3-oxododecanoyl homoserine lactone inhibits angiogenesis by activating the angiopoietin-Tie system in human endothelial cells	**Jungho Shin** Chung-Ang University College of Medicine, Korea
1241	In vivo imaging of renal microvasculature in murine ischemia-reperfusion injury models using optical coherence tomography angiography	**Jang-Hee Cho** Kyungpook National University Hospital, Korea
1250	Risk factors for post-contrast acute kidney injury in patients repeatedly administered both iodine- and gadolinium-based contrast media on the same visit to the emergency department: A retrospective study	**Soo Hyun Han** Chungnam National University Hospital, Korea
1251	Urine-drived stem cell attenuate renal inflammation and fibrosis after renal ischemia reperfusion	**Dae Eun Choi** Chungnam National University Hospital, Korea
1274	Platelet to lymphocyte ratio and neutrophil to lymphocyte ratio are prognostic factors of acute kidney injury outcome	**Ha Nee Jang** Gyeongsang National University Hospital, Korea
1278	Effects of Cardiovascular Outcomes of Sacubitril-valsartan in patients with Acute Kidney Injury	**Eun Ji Yang** Gangnam Severance Hospital, Yonsei University College of Medicine, Korea
1283	Inhibition of KDM5 attenuates renal fibrosis after ischemic kidney injury	**Sungjin Chung** School of Medicine, The Catholic University of Korea, Korea
1292	The impact on serum PTH levels of the severity of acute kidney injury	**Jee Eun Choi** Wonkwang University Hospital, Korea
1294	Utility of contrast-enhanced ultrasound to predict renal recovery from sepsis-associated acute kidney injury receiving renal replacement therapy	**Jungho Shin** Chung-Ang University College of Medicine, Korea
1299	Procalcitonin decrease predicts mortality and renal recovery from dialysis in patients with sepsis-induced acute kidney injury receiving continuous renal replacement therapy	**Il Young Kim** Pusan National University Yangsan Hospital, Korea
1301	The role of NRF2 in the recovery of hypoxia/reoxygenation injury in aged kidney cells	**Min Jee Jo** Korea University Guro Hospital, Korea
1303	Renal tuberculosis in a healthy young adult with idiopathic CD4 lymphocytopenia	**Chunghyun Kim** Jeju National University School of Medicine, Korea

Acute Kidney Injury

Abstract No.	Title	Presenting Author
1326	Serum ST2 level reflects deteriorated liver and kidney function in liver transplant recipients	**Jong Joo Moon** Seoul National University Biomedical Research Institute, Korea
1388	Elevated serum lactate dehydrogenase levels as a prognostic factor for mortality and acute kidney injury among hospitalized patients with COVID-19	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
1395	Biological importance of hispidulin in the medicine against kidney disorders	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
1439	2-Mercaptoethanol protects against DNA damage induced by renal ischemia and reperfusion injury through upregulation of glutathione peroxidase 4	**Daeun Moon** Jeju National University, Korea
1442	Short-term high-fat diet intake aggravates cisplatin-induced acute kidney injury via increased oxidative stress and mitochondrial damage	**Yong Kwon Han** Kyungpook National University School of Medicine, Korea
1452	Time-trend of post-operative acute kidney injury from a multicenter cohort study	**Soie Kwon** Seoul National University Hospital, Korea
1459	A clinical course of acute oxalate nephropathy combined with acute tubular necrosis by ethylene glycol poisoning	**Jee Eun Choi** Wonkwang University Hospital, Korea
1466	Analysis of the characteristics of acute kidney injury and mortality in patients with urinary tract stones	**Young Eun Choi** Korea University Anam Hospital, Korea
1470	Validation study for the simple postoperative acute kidney injury risk index in patients receiving non-cardiac major surgeries	**Soie Kwon** Seoul National University Hospital, Korea
1480	Kidney tissue extracellular matrix derived sponges promotes renal tissue regeneration in acute kidney injury model	**Jae Yun Kim** Pohang University of Science and Technology (POSTECH), Korea

Big Data

Abstract No.	Title	Presenting Author
1064	Combined effects of chronic kidney disease and nonalcoholic fatty liver disease on the risk of cardiovascular disease in patients with diabetes	**Namju Heo** Seoul National University Hospital, Korea
1074	Deep learning predicts the differentiation of kidney organoids derived from human induced pluripotent stem cells	**Jong Young Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea

Big Data

Abstract No.	Title	Presenting Author
1083	Effects of vitamin C and E on mortality according to smoking status	**Eunjin Bae** Gyeongsang National University Changwon Hospital, Korea
1110	Seasonality in hip fracture among hemodialysis patients and kidney transplant recipients in South Korea	**Hye Eun Yoon** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
1127	Analysis of changes in dialysis-related treatment practices using data from the health insurance review and assessment service	**Hyung Jong Kim** Bundang CHA General Hospital, Korea
1175	Comparison of arteriovenous access patency according to health insurance type; Analysis using Korean National Health Insurance Database from 2009 to 2019	**Won Ho Lee** Hallym University Sacred Heart Hospital, Korea
1210	Validation of the operational definition of mortality analysis in hemodialysis population using the health insurance review and assessment service database	**Dong Hee Lee** Hallym University Sacred Heart Hospital, Korea
1243	Risks of mortality and causes of death according to kidney function parameters: A nationwide observational study in Korea	**Sehyun Jung** Gyeongsang National University Hospital, Korea
1277	Trends in statin therapy for secondary prevention in patients with atherosclerotic cardiovascular diseases on dialysis using the Korean National Health Insurance Service data, 2013-2018	**Yu Ah Hong** The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea
1285	Myocardial infarction, stroke or all-cause death in a general population with or without albuminuria	**Junkyu Park** School of Medicine, The Catholic University of Korea, Korea
1309	Impact of proteinuria on the development of new-onset diabetes in young adults	**Yaerim Kim** Keimyung University School of Medicine, Korea
1317	Impact of dietary intake of each vitamin on all-cause mortality in decreased kidney function	**Yaerim Kim** Keimyung University School of Medicine, Korea
1358	Thiazide-related hyponatremia: A nationwide population-based cohort study	**Hyo Jin Boo** Chung-Ang University Hospital, Korea
1413	Depression and suicide in end stage kidney disease (on dialysis and kidney transplant recipients): A national-wide population study	**Jun Young Lee** Wonju Severance Christian Hospital, Korea
1455	Association between haemorrhagic fever with renal syndrome and cancers	**Yongjin Yi** Dankook University Medical College, Korea

Diabetic Nephropathy

Abstract No.	Title	Presenting Author
1052	Pathologic validation of Japanese Renal Pathology Society (JRPS) classification and new challenges on predicting renal prognosis in patients with diabetic nephropathy	**Minseob Eom** Wonju Severance Christian Hospital, Korea
1057	Evaluation of embelin alone and its combination with metformin on diabetic nephropathy	**Sourabh Jain** Arihant School Of Pharmacy And Bri, India
1100	Pure effects of diabetes on renal outcome in patients with normal renal function – direct comparison between diabetic and nondiabetic individuals	**Samel Park** Soonchunhyang University College of Medicine, Korea
1109	Comparison of clinicopathologic features and renal prognosis between pure diabetic nephropathy and mixed diabetic nephropathy in patients with type 2 diabetes	**Jin Ah Park** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
1140	Association of neutrophil extracellular traps with the development of diabetic nephropathy in type 2 diabetic model	**Jae-Wan Kwon** Kyungpook National University Hospital, Korea
1149	The decreased serum level of platelet derived growth factor-C in diabetic kidney disease	**Hyeongwan Kim** Chonbuk National University Hospital, Korea
1177	Oral delivery of insulin loaded chitosan / Plga microspheres for management of diabetics	**Aakanchha Jain** National Institute of Pharmaceutical Education and Research, India
1198	Effect of renal function and proteinuria on survival of diabetic foot ulcer	**Jiyoung Son** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea
1204	Antidiabetic and renoprotective effects of trigonella foenum graecum and sodium orthovanadate in experimental diabetes rats	**Pardeep Kumar** FH Medical College and Hospital, India
1244	Effect of intravitreal vascular endothelial growth factor inhibitors on kidney function	**Vikash Kumar Pandey** Indira Gandhi Institute of Medical Sciences, India
1266	Renalprotective effect of ganoderic acid against renal dysfunction in type II diabetes via alteration of TGF-β	**Vikas Kumar** Sam Higginbottom University of Agriculture, Technology & Sciences, India
1293	Enrichment of gut microbiome-related pyruvate fermentation ameliorates progression of diabetic kidney disease	**Youngmin Yoon** Chosun University Hospital, Korea
1311	2-Deoxy-D-Ribose induces oxidative damage through inhibition of system χc- in renal tubular epithelial cells	**Miyeon Kim** Jeju National University Hospital, Korea

Diabetic Nephropathy

Abstract No.	Title	Presenting Author
1321	Flavonoid rich fraction of alstonia scholaris leaves alleviates diabetic nephropathy in experimental rats via its antioxidant and anti-inflammatory potential	**Devendrakumar Vaishnav** Saurashtra University, India
1443	Empagliflozin attenuates renal fibrosis through the DsbA-L- CAS-STING pathway	**Junghyun Cho** Soonchunhyang University College of Medicine, Korea
1462	CZ slows the progression of the renal fibrosis associated with type 2 diabetes in KKAy mice	**Hoe-Yune Jung** NovMetaPharma Co., Ltd. School of Interdisciplinary Bioscience and Bioengineering, Pohang University of Science and Technology (POSTECH), Korea
1473	Proteinuria and sodium-glucose co-transporter-2 inhibitors	**Jose Francisco** Centro Hospitalar de Trás-os-Montes e Alto Douro, Portugal
1476	Preclinical evaluation of an ayurvedic preparation, pramehari ark in type-2 diabetic nephropathy	**Riddhi Shukla** Atmiya University, India

Fluid, Electrolyte and Acid-Base

Abstract No.	Title	Presenting Author
1033	A case of three Gitelman syndrome patients with chronic hypokalemia from a two-generation family.	**Ju Hwan Oh** Presbyterian Medical Center, Korea
1166	A journey for diagnosis of hyponatremia in metastatic epithelioid mesothelioma	**Wonkyo Yi** Chonbuk National University Hospital, Korea
1281	Distal renal tubular acidosis with severe hypokalemia in Sjögren's syndrome.	**Baigalmaa Sodnomdarjaa** State Second Central Hospital of Mongolia, Mongolia
1351	The incidence, and clinical outcomes of hyponatremia associated with alcohol prescription	**Jungyoon Choi** Gyeongsang National University Changwon Hospital, Korea
1410	Therapeutic effectiveness of bavachinin in the medicine against various types of enzymes through scientific data analysis	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India

Geriatric Nephrology

Abstract No.	Title	Presenting Author
1291	Geriatric nutrition risk index is associated with retinopathy in patients with type 2 diabetes	**Yo Seop Cha** Kangnam Sacred Heart Hospital, Korea
1335	Association between geriatric nutritional risk index and decline in kidney function	**Sukmin Yoon** Samsung Changwon Hospital, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
1016	A case of seronegative pulmonary-renal syndrome in advanced IgA nephropathy	**Alrik Earle Escudero** Makati Medical Center, Philippines
1020	Familial Clustering in Sri Lankan CKDu cases	**Mgih Bandara** Centre For Research National Hospital Kandy, Sri Lanka
1021	Risk factors and their effect on the progression of Sri Lankan CKDu	**Mgih Bandara** Centre For Research National Hospital Kandy, Sri Lanka
1062	Identification of renoprotective effect through regulation of lipid metabolism related ring finger protein 20 in chronic kidney disease with obesity	**You-Jin Kim** Kyungpook National University Hospital, Korea
1073	Radiomic feature analysis based on computed tomography images to predict baseline renal function in patients with chronic kidney disease	**Seongho Jo** Inha University Hospital, Korea
1086	Role of integrin in the interaction between podocyte and glomerular basement membrane	**Jae Seok Kim** Yonsei University Wonju College of Medicine, Korea
1095	SGLT2 Inhibitors: Walking in the world of glomerulopathies	**Ciria Sousa** Centro Hospitalar de Trás-os-Montes e Alto Douro, Portugal
1112	Lymphangiogenesis in biopsy-proven lupus nephritis	**Jihyun Yeom** Chonbuk National University Hospital, Korea
1136	Sirt6 activation decreases renal tubulointerstitial fibrosis and inflammation by TGF-β/Smad signaling pathway	**Kyung Pyo Kang** Chonbuk National University Medical School, Korea
1141	Renal biopsy is mandatory in normal urinary findings with unknown origin CKD/hypertension	**Byoung-Soo Cho** Cho Byoung Soo Clinic, Korea
1174	Minimal change disease following the second dose of Moderna COVID-19 vaccine	**Young Hee Kim** Dong-A University Hospital, Korea

Glomerular and Tubulointerstitial Disorders (CKD)

Abstract No.	Title	Presenting Author
1206	Akt1 is involved in renal fibrosis and tubular apoptosis in a murine model of acute kidney injury-to-chronic kidney disease transition	**Il Young Kim** Pusan National University Yangsan Hospital, Korea
1208	More than meets the eye. Antineutrophil cytoplasmic autoantibody (ANCA) – associated vasculitis (AAV) – a diagnostic challenge in elderly	**Carolina Ferreira** Centro Hospitalar Tondela Viseu, Portugal
1267	Performance of new race-free eGFR equation in predicting complications in chronic kidney disease: From the KNOW-CKD study	**Jaehee Koh** Kangbuk Samsung Hospital, Korea
1269	BCL2 associated athanogene 2 (BAG2) mediates kidney fibrosis through TGFb1 signaling pathway	**Minji Sung** CHA University, Korea
1357	Clinical relevance of focal segmental glomerulosclerosis classification proposed by the KDIGO 2021 guideline for glomerular diseases	**Eunjeong Kang** Ewha Womans University Medical Center, Korea
1361	Effect of zinc supplementation on nutritional status in children with chronic kidney disease : A systematic review	**Shinta Retno Wulandari** Bhayangkara Lemdiklat Indonesian Police Hospital, Indonesia
1370	Peripheral blood toll like receptor 7 expression and serum interferon lambda 1 levels in systemic lupus erythematosus and their relation to disease activity and lupus nephritis	**Hayam El Aggan** Faculty of Medicine, Alexandria University, Egypt
1393	Systemic lupus erythematosus in pregnancy, biopsy proven Lupus nephritis in Mongolia	**Sarantuya Batgerel** State Second Central Hospital of Mongolia, Mongolia
1396	Renoprotective and antioxidant enhancing effects for cinnamaldehyde in a rat model of chronic kidney disease	**Rohit Kumar** Memorial Institute of Engineering and Technology, India
1428	Effect of curcumin and resveratrol supplementation on bone and muscle mass in patients with chronic kidney disease : A systematic review	**Itsna Ulin Nuha** Budhi Pratama Clinic, Indonesia
1449	The predictor for renal outcomes in patients with class IV lupus nephritis in Korean; CMC GN registry	**Hyunglae Kim** The Catholic University of Korea, St. Vincent's Hospital, Korea
1451	A case of pathologically confirmed membranous glomerulonephritis after COVID-19 recombinant vaccination	**Seong Gyu Kim** Daegu Catholic University Medical Center, Korea
1456	A case of rhabdomyolysis following COVID-19 recombinant vaccination	**Seong Gyu Kim** Daegu Catholic University Medical Center, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
1005	Comparison of CHA2DS2-VASc and C2HEST scores for predicting the incidence of atrial fibrillation among patients with end-stage renal disease - The known, The unknown, The unforgettable	**Wei Syun Hu** China Medical University Hospital, Taiwan
1018	Clinical outcomes of hemodialysis patients with COVID-19 in a Tertiary Hospital: A single-center retrospective study	**Hazel Christine Delos Santos** Makati Medical Center, Philippines
1022	Serum GDF-15 associated with cognitive dysfunction in end stage renal disease on maintenance hemodialysis	**Hae Ri Kim** Chungnam National University Sejong Hospital, Korea
1028	Nutritional status of chronic kidney disease patients on maintenance hemodialysis in a tertiary hospital	**Marika Ilysha Lapidario** Remedios Trinidad Romualdez Hospital, Philippines
1035	Usual home or hospital-based exercise does not affect muscle strength in hemodialysis patients	**Ran-Hui Cha** National Medical Center, Korea
1041	A case of idiopathic hypereosinophilic syndrome in hemodialysis patient	**Jeong-Myung Ahn** Bongseng Memorial Hospital, Korea
1044	Clinical significance of soluble ST2 for the evaluation of volume status in hemodialysis patients: A single-center study	**Hyeon Jeong Lee** Keimyung University School of Medicine, Korea
1049	Clinical parameters predicting frailty in hemodialysis dependent patients	**Abdul Rehman Arshad** Combined Military Hospital Peshawar, Pakistan
1051	Novel experience in using medium cut-off hemodialysis in patients with multiple myeloma complicated by dialysis-dependent acute kidney injury: A case series in Asian population	**Wen Jie Lau** University Malaya Medical Centre, Malaysia
1054	Gut microbiome short chain fatty acid profile in routine twice weekly hemodialysis patients with ascites	**Aryo Suseno** Dr. Moewardi General Hospital Surakarta, Sebelas Maret University, Indonesia
1069	Serum calcification propensity and association with bone mineral density in hemodialysis patients	**Wonki Kim** Gachon University Gil Medical Center, Korea
1078	The effect of nephrologist care on patient survival in hemodialysis facilities: A Korean nationwide cohort study	**Do Hyoung Kim** Kangnam Sacred Heart Hospital, Korea
1090	High cortisol levels are associated with oxidative stress and mortality in maintenance hemodialysis patients	**Seyeon Park** Kangnam Sacred Heart Hospital, Korea
1091	COVID-19 related clinical outcome among Korean hemodialysis patients	**Hayne Cho Park** Kangnam Sacred Heart Hospital, Korea

Hemodialysis

Abstract No.	Title	Presenting Author
1108	The consecutive increase in vascular access blood flow after percutaneous transluminal angioplasty in hemodialysis patients	**Seoyon Koh** Ewha Womans University Mokdong Hospital, Korea
1158	Target blood pressure in Korean hemodialysis patients for optimal survival	**Ji Eun Kim** Korea University Guro Hospital, Korea
1161	Humoral response to SARS-CoV-2 vaccination in dialysis patients	**Su Min Kim** Inje University Haeundae Paik Hospital, Korea
1188	The prevalence of adrenal insufficiency in hemodialysis patients according to low-dose and standard-dose ACTH stimulation tests	**Hyun Suk Kim** Chuncheon Sacred Heart Hospital, Korea
1194	Impact of needle type on substitution volume during online hemodiafiltration: Plastic cannula versus metal needles	**Ajin Cho** Kangnam Sacred Heart Hospital, Korea
1196	The Interleukin 6 is associated inflammatory biomarker for arteriovenous fistula failure in hemodialysis pateints	**Jihyun Baek** Bundang CHA General Hospital, Korea
1202	Transient left ventricular dysfunction after flow reduction therapy for high-flow fistula in a hemodialysis patient: A case report	**In Soo Kim** Hallym University Sacred Heart Hospital, Korea
1203	Unplanned hemodialysis and related factors in chronic kidney disease patients	**Kyung Ho Lee** Soonchunhyang University Bucheon Hospital, Korea
1215	The association between arterial stiffness and increased medial thickness in hemodialysis patients	**Seok-Hyung Kim** Chuncheon Sacred Heart Hospital, Korea
1221	Effect of expanded hemodialysis on inflammatory cytokines: 3-year cohort study	**Hyo-Wook Gil** Soonchunhyang University Cheonan Hospital, Korea
1222	A case of successful treatment of AVF thrombosis by overcoming 3 obstacles (Old thrombus after 2 weeks, Complex shape of draining vein, Residual thrombus after thrombus removal)	**Heeryong Lee** LEESIN Hemodialysis and Intervention Clinic, Korea
1229	Changes of total body water in hemodialysis patients : A comparison between bcm and inbody measurements	**Minsu Yang** Chuncheon Sacred Heart Hospital, Korea
1235	Current state and factors associated with type and maturation of hemodialysis arteriovenous access: A single center cohort study	**Yong-Soo Kim** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
1247	Quality of sleep amongst patients with end stage renal disease on hemodialysis	**Gullali Naeem** Combined Military Hospital Peshawar, Pakistan

Hemodialysis

Abstract No.	Title	Presenting Author
1265	Effects of anemia and ferritin on the all-cause mortality of hemodialysis patients	**Soie Kwon** Seoul National University Hospital, Korea
1282	High-flow arteriovenous fistula and myocardial fibrosis in hemodialysis patients with non-contrast cardiac magnetic resonance imaging	**Sungmin Kim** Hallym University Sacred Heart Hospital, Korea
1307	A novel 2-year survival marker of end-stage renal disease patients initiating maintenance hemodialysis	**Eu Jin Lee** Chungnam National University Hospital, Korea
1320	Microbiological safety of substitution fluid produced by central dialysis fluid delivery system for high-volume hemodiafiltration	**Young-Il Jo** Konkuk University Medical Center, Korea
1327	Impact of the body composition on responsiveness to erythropoiesis-stimulating agent in patients with chronic hemodialysis	**Hyang Yun Lee** Chung-Ang University Hospital, Korea
1338	Prevalence and associated factors of protein-energy wasting among maintenance hemodialysis patients in University of Gadjah Gada Hospital, Yogyakarta	**Nadira D'mas Getare Sanubari** University Gadjah Mada, Indonesia
1343	Validity of dialysis malnutrition and malnutrition inflammation score compared to GLIM criteria to assess malnutrition in maintenance hemodialysis patients	**Susetyowati Susetyowati** University Gadjah Mada, Indonesia
1360	The influence of cardiovascular comorbidity on the survival rates of dialysis patients in Uzbekistan	**Olimkhon Sharapov** Republican Specialized Scientific Practical Medical Center of Nephrology and Kidney transplantation, Uzbekistan
1363	Cardiovascular comorbidity and survival in dialysis patients of the rural population of Uzbekistan	**Olimkhon Sharapov** Republican Specialized Scientific Practical Medical Center of Nephrology and Kidney transplantation, Uzbekistan
1369	Efficacy of medium cut-off dialyzer on elimination of free light chain compared to high-flux dialyzer in patients undergoing hemodialysis	**Seoyoung Lee** Gangnam Severance Hospital, Korea
1371	Effectiveness of an Iron subsidy program in improving hemoglobin values end stage kidney disease hemodialysis patients	**Yusuke Ozawa** DaVita Malaysia, Malaysia
1383	The association among carotid IMT, PWV and recurrent access failure in hemodialysis patients	**Seok-Hyung Kim** Chuncheon Sacred Heart Hospital, Korea
1397	Effects of planned exercise training on glomerular filtration rate in patients with CKD undergoing hemodialysis	**Vijay Samuel Raj V** JSS College of Physiotherapy, India

Hemodialysis

Abstract No.	Title	Presenting Author
1398	Is interdialytic weight gain related to post-dialysis serum sodium levels?	**Mehak Zaidi** Combined Military Hospital Peshawar, Pakistan
1425	Diet-related inflammation is associated with malnutrition-inflammation markers in maintenance hemodialysis patients: Results of a cross-sectional study in China using dietary inflammatory index	**Guixing Zeng** The Second Affiliated Hospital of Guangzhou University of Chinese, China
1426	Tumoral calcinosis of coccyx area in hemodialysis patient	**Hyeon Ah Seo** Chosun University Hospital, Korea
1445	Comparison of characteristics of high Qa/CO in hemodialysis patients	**Sun Ryoung Choi** Sahmyook Medical Center, Korea
1469	Efficacy and safety of short term cinacalcet for secondary hyperparathyroidism in hemodialysis patients	**Phongsak Dandecha** Songklanagarind Hospital, Prince of Songkla University, Thailand

Hypertension and Vascular Biology

Abstract No.	Title	Presenting Author
1148	Vascular protection of DPP-4 inhibitor in atherosclerosis with CKD rat model	**Soon-Kil Kwon** Chungbuk National University College of Medicine, Korea
1240	Modulation of physical activity, adiposity, diet composition and cardiovascular risk factors in type 2 diabetic patients	**Vikas Sharma** Sarojini Naidu Medical College, India
1340	Cardio and reno-protective potential of ethanolic extract of madhuca longifolia leaves in a rat model of nitric oxide deficiency	**Rahul Kumar** Jagannath Kishore College, India
1382	CD2 biased immune response skews the SAG mediated therapy for a predominant Th1 response to treat kidney infection in experimental infection	**Sukrat Sinha** Nehru Gram Bharati Deemed to be University, India

Inherited Kidney Disease (Pediatric Nephrology)

Abstract No.	Title	Presenting Author
1185	Non-contrast low-dose CT can also be available for volumetry in ADPKD patients	**Jin Eop Kim** Chuncheon Sacred Heart Hospital, Korea
1286	Prevalence of attenuated mucopolysaccharidosis type I among patients with chronic kidney disease	**Junkyu Park** School of Medicine, The Catholic University of Korea, Korea

Inherited Kidney Disease (Pediatric Nephrology)

Abstract No.	Title	Presenting Author
1300	A pediatric case with Dent disease detected by asymptomatic proteinuria in school urine test	**Jin-Soon Suh** The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea
1364	Genetic analysis of the gitelman syndrome coexisting with osteogenesis imperfecta	**Se Jin Park** Eulji University Hospital, Korea
1372	Incidence and clinical course of non-typhoidal salmonella enterocolitis induced acute kidney injury	**Su Yeon Hong** The Catholic University of Korea, Uijeongbu St. Mary's Hospital, Korea
1447	Sex differences in renal prognosis of childhood onset lupus nephritis	**Eujin Park** Hallym University College of Medicine, Korea

Non-dialysis CKD

Abstract No.	Title	Presenting Author
1030	Clinical significance of serum creatinine-to-cystatin C ratio on renal outcomes in non-dialysis-dependent CKD patients: Results from the KNOW-CKD study	**Donghyuk Kang** Korea University Guro Hospital, Korea
1034	Urate-lowering efficacy and renal safety of febuxostat in patients with advanced chronic kidney disease not yet on dialysis: A meta-analysis of observational studies	**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea
1042	The estimated mediating roles of anemia-related variables in the association between kidney function and mortality: A National Health and Nutrition Examination Survey (NHANES) study	**Kyun Young Kim** Seoul National University Hospital, Korea
1055	Low klotho/fibroblast growth factor 23 ratio is an independent risk factor for renal progression in chronic kidney disease: The KNOW-CKD study	**Hyo Jin Kim** Pusan National University Hospital, Korea
1070	Comparison of cardiovascular event predictability between 2009 CKD-EPI equation and new 2021 CKD-EPI equations in Korean chronic kidney disease cohort: From KNOW-CKD study	**Ji Hye Kim** Seoul National University Hospital, Korea
1102	The relationship between the degree of diabetic retinopathy and advanced chronic kidney disease in elderly type 2 diabetic patients	**Seong Gyu Kim** Daegu Catholic University Medical Center, Korea
1106	Mechanism of nuclear receptors and Aquaporin 2 as a mechanism of renal water regulation by abnormal lipid metabolism	**Se-Hyun Oh** Kyungpook National University Hospital, Korea
1111	Analysis of nutrient intake and diet quality in chronic kidney disease patients not on dialysis : A cross-sectional study	**Jeong Eun Kim** Kyung Hee University, Korea

Non-dialysis CKD

Abstract No.	Title	Presenting Author
1123	Association between serum sodium concentration and coronary artery calcification in non-dialysis chronic kidney disease: Results from the KNOW-CKD study	**Chanwoo Nam** University at Buffalo Jacobs School of Medicine and Biomedical Sciences, United States
1151	Impact of pregnancy on the progression of total kidney volume in autosomal dominant polycystic kidney disease	**Jin Hyuk Paek** Keimyung University School of Medicine, Korea
1170	Waist–hip ratio measured by bioelectrical impedance analysis as a valuable predictor of chronic kidney disease development in a middle-aged population	**Younghoon Song** Korea University Guro Hospital, Korea
1182	Atherogenic indices and the risk of development and progression of chronic kidney disease: Results from Gangnam Severance Medical Cohort (GSMC), 2006-2021	**Donghwan Oh** Gangnam Severance Hospital, Korea
1184	Diastolic heart dysfunction and progression of chronic kidney disease: Analysis from the KNOW-CKD study	**Eunjeong Kang** Ewha Womans University Medical Center, Korea
1186	24, 25-dihydroxy vitamin D and vitamin D metabolite ratio as vitamin D biomarkers in chronic kidney disease	**Seunghye Lee** Gyeongsang National University Hospital, Korea
1228	Behavioral changes and risk perception among chronic kidney disease patients after COVID-19 pandemic	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
1256	The Effect of AST-120 on regulatory T cell population in patients with chronic kidney disease	**Nagyeom Lee** Kosin University Gospel Hospital, Korea
1289	Association between consumption of dietary supplements and chronic kidney disease prevalence in the Korean adult population	**Yina Fang** Korea University Anam Hospital, Korea
1302	Relationship between dietary carbohydrate-to-fiber intake ratio and prevalent chronic kidney disease: Korean National Health and Nutrition Examination Survey (KNHANES) 2016-2019	**Eui Suk Chung** Soonchunhyang University Seoul Hospital, Korea
1304	Clinical assessment of rapid progressor in ADPKD: A preliminary result from RAPID-ADPKD (Retrospective epidemiologic study of Asian-Pacific patients with rapid disease progression of autosomal dominant polycystic kidney disease)	**Yun Kyu Oh** SMG-SNU Boramae Medical Center, Korea
1314	Impact of the risk perception of COVID-19 pandemic on physical activity and body weight in CKD patients	**Yaerim Kim** Keimyung University School of Medicine, Korea
1324	Dietary education may reduce blood Cd and Hg levels in chronic kidney disease patients with higher blood Cd and Hg levels	**Dong Eun Yang** Dong-A University Hospital, Korea

Non-dialysis CKD

Abstract No.	Title	Presenting Author
1334	Efficacy and cost-effectiveness of darbepoetin alfa once every 4 weeks for the correction of anemia in patients with chronic kidney disease not on dialysis in Korea	**Kyung Ho Lee** Soonchunhyang University Bucheon Hospital, Korea
1362	Validation of the kidney failure risk equation in adult Filipino patients with chronic kidney disease: A single center study	**Bernadette Magsalin** St. Luke's Medical Center Quezon City, Philippines
1373	The effect of statins on mortality of patients with chronic kidney disease	**Gang Jee Ko** Korea University Guro Hospital, Korea
1378	The necessity of early HBV vaccination in diabetic elderly patients with chronic kidney disease	**Young Sung Boo** Dankook University Hospital, Korea
1408	Chronic kidney disease in hyperuricemic patients at the social service out-patient department of St. Luke's Medical Center - Quezon City	**Joseph San Pedro** St. Luke's Medical Center Quezon City, Philippines
1427	Huge thrombosis of inferior vena cava and bilateral renal vein in membranous nephropathy patient	**Wonju Yoon** Chosun University Hospital, Korea
1438	Abdominal aortic calcification and cardiovascular outcomes in chronic kidney disease: Findings from KNOW-CKD study	**Sang Heon Suh** Chonnam National University Hospital, Korea
1448	Urinary calcium excretion and kidney stone in ADPKD patients	**Yaerim Kim** Keimyung University School of Medicine, Korea

Peritoneal Dialysis

Abstract No.	Title	Presenting Author
1065	Pleuroperitoneal leakage: Case report	**Simona Cinaglia** Istituto Nazionale Ricerca E Cura Dell'Anziano (Inrca), Italy
1072	Differences in outcome of peritoneal dialysis patients according to characteristics of facility and patients: Results from The Peritoneal Dialysis Outcomes and Practice Patterns Study (PDOPPS) Korea	**Seon-Mi Kim** Seoul National University Hospital, Korea
1130	Case study conservative management pleuroperitoneum leak, rare complication of CAPD	**Haryono Yuniarto** FKKMK UGM/RSUP Dr Sardjito, Indonesia
1213	5-HT2/5-HT2B receptor antagonism abrogates fibrotic potential of peritoneal fibroblasts by targeting STAT3 pathway in CAPD patients	**Saurabh Chaturvedi** GSVM Medical College, India

Peritoneal Dialysis

Abstract No.	Title	Presenting Author
1253	Effect of meteorological factors on the incidence of peritoneal dialysis-related peritonitis	**Haeun Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
1273	The relationship of extracellular fluid/intracellular fluid volume ratio with death and cardiovascular events in peritoneal dialysis patients	**Yun Jung Oh** Cheju Halla General Hospital, Korea
1423	Cold weather's effect on peritoneal dialysis-related peritonitis: A mixed-methods approach	**Chinakorn Sujimongkol** Loei General Hospital, Thailand

Transplantation

Abstract No.	Title	Presenting Author
1032	Evaluating glomerular filtration rate in healthy potential kidney donors	**Thanh-Tam Tran-Thai** Can Tho University of Medicine and Pharmacy, Vietnam
1038	Impacts of sclerostin on cardiovascular and bone mineral outcomes in kidney transplantation patients	**Hee Byung Koh** Severance Hospital, Korea
1043	Discovery of cellular and molecular pathways involved in the development of anti HLA antibody through single cell RNA sequencing in highly sensitized mouse model	**Hanbi Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
1050	Cardiovascular effect of metformin in kidney transplant recipients with post-transplantation diabetes mellitus	**Dongyeon Lee** Asan Medical Center, University of Ulsan College of Medicine, Korea
1087	Impact of low level donor-specific HLA antibodies in living and deceased donor kidney transplantation: A nationwide cohort study	**Haeun Lee** The Catholic University of Korea, Seoul St. Mary's Hospital, Korea
1101	Histopathological changes based on a 12-Month protocol biopsy in kidney transplant recipients	**Jungheon Kwon** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea
1107	Impact of cytomegalovirus and BK virus infection on clinical outcomes in kidney transplant recipients	**Woo Yeong Park** Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea
1125	Effect of pretransplant dialysis vintage on clinical outcomes in deceased donor kidney transplant	**Sangdon Park** Kyungpook National University Hospital, Korea

Transplantation

Abstract No.	Title	Presenting Author
1126	Incidence of cardiovascular events and mortality in kidney transplant recipients compared to general population in Korea	**Jung Hwa Ryu** Ewha Womans University Medical Center, Korea
1128	The case series of erythrocytosis after kidney transplantation	**Dwita Dyah Adyarini** RSUP Dr Sardjito, FKKMK Universitas Gadjah, Indonesia
1142	Regulatory T cell populations may be associated with transplant outcomes	**Yanghyeon Kim** Kosin University Gospel Hospital, Korea
1146	Clinical benefits of coronary computed tomographic angiography to prevent cardiovascular outcomes in renal transplant recipients	**Ga Young Heo** Severance Hospital, Korea
1169	Interactive impact of tacrolimus inter-patient variability and intra-patient variability in allograft outcomes in kidney transplantation	**Yohan Park** Konyang University Hospital, Korea
1187	Gender disparity in kidney transplantation in Korea	**Miyeun Han** Hangang Sacred Heart Hospital, Korea
1195	A case of simultaneous living donor kidney transplantation and hand-assisted laparoscopic nephrectomy	**Yoojin Lee** Inje University Haeundae Paik Hospital, Korea
1201	A case report of recurrent focal segmental glomerulosclerosis and antibody-mediated rejection after kidney transplantation	**Eu Jin Lee** Chungnam National University Hospital, Korea
1214	Impact of blood pressure on kidney outcomes after kidney transplantation	**Kyungwon Kim** Severance Hospital, Korea
1216	Impact of iron status on kidney outcomes in kidney transplantation patients	**Hyo Jeong Kim** Severance Hospital, Korea
1218	Long-term clinical outcomes in ABO incompatible kidney transplantation in patients with high baseline anti-A/B antibody titer	**Sang Hun Eum** The Catholic University of Korea, Incheon St. Mary's Hospital, Korea
1224	Rare, but severe side effects of mycophenolate mofetil in pediatric kidney transplant patients	**Jinwoon Joung** Samsung Medical Center, Korea
1232	Effect of pre-transplant or post-transplant diabetes mellitus on allograft rejection in kidney transplant recipients	**Hyo Jin Kim** Pusan National University Hospital, Korea
1255	Association of serum osteoprotegerin with vascular calcification or stiffness and cardiovascular outcomes in kidney transplant patients: Results from KNOW-KT study	**Hee Jung Jeon** Kangdong Sacred Heart Hospital, Korea

Transplantation

Abstract No.	Title	Presenting Author
1260	Malignancies after renal transplantation in Korean recipients	**Jeesu Min** Seoul National University Hospital, Korea
1263	Eculizumab therapy for antibody-mediated injury in kidney transplant recipients	**Sujung Heo** Kosin University Gospel Hospital, Korea
1284	Varicella infection after renal transplantation	**Abhilash Chandra** Dr. Ram Manohar Lohia Institute of Medical Sciences, India
1288	Relationship between prognosis and kt/V after kidney transplantation in peritoneal dialysis patients	**A Young Kim** Yeungnam University Medical Center, Korea
1290	Factors affecting time to transplantation in living-donor kidney transplantations: A single centre study from Sri Lanka	**Eranga Wijewickrama** Faculty of Medicine, University of Colombo, Sri Lanka
1313	Low dose valganciclovir as a pre-emptive therapy is effective for cytomegalovirus infection in kidney transplantation: A single-center experience	**Haekyung Lee** Soonchunhyang University Seoul Hospital, Korea
1333	Risk prediction model for kidney function decline in living kidney donors: A model development and external validation study	**Sehoon Park** Seoul National University Hospital, Korea
1348	Impact of pre-transplant body mass index on post-transplant malignancy after kidney transplantation	**Sojung Youn** The Catholic University of Korea, Eunpyeong St. Mary's Hospital, Korea
1356	Incidental renal cell carcinoma in bilateral native nephrectomy of renal transplant recipient with autosomal dominant polycystic kidney disease	**Byung Chul Shin** Chosun University Hospital, Korea
1366	Impact of early rejection and ABO-incompatible kidney transplantation on chronic antibody-mediated rejection and graft outcome	**Ga Young Heo** Severance Hospital, Korea
1381	The effect of cardiovascular risk factors on clinical outcomes after kidney transplantation: A nationwide prospective cohort study	**Jeonghwan Lee** SMG-SNU Boramae Medical Center, Korea
1407	Comparison of early and late pneumocystis jirovecii pneumonia in kidney transplant patients	**Gongmyung Lee** Severance Hospital, Korea
1432	Comparison of combination preemptive therapy of high-dose IVIG and rituximab versus rituximab in kidney transplant patients with subclinical de novo donor-specific antibodies: A randomized clinical trial	**Hyung Woo Kim** Severance Hospital, Korea
1441	Effect of anti thymocyte globulin induction therapy in kidney transplantation network meta-analysis using recent data	**Seongho Jo** Inha University Hospital, Korea
1446	Clinical characteristics and outcomes of kidney transplantation in autosomal dominant polycystic kidney disease patients	**Jiyeon Myung** Severance Hospital, Korea
1471	Circulating endothelial microparticles and von willebrand factor in renal antibody-mediated allograft rejection	**Shubhi Kamthan** SGPGIMS, India

Others

Abstract No.	Title	Presenting Author
1008	Urea suppresses the alternative activation of murine macrophages	**Seung Yun Chae** Korea Advanced Institute of Science and Technology (KAIST), Korea
1012	Association of bladder post-void residual volume and urinary tract infection in adult females	**Natalie Maramba** San Pedro Hospital, Inc., Philippines
1019	Exploration of potential chronic kidney disease markers in breath through TD-GCMS (Thermal Desorption Gas chromatography Mass-spectrometry)	**Jieun Oh** Kangdong Sacred Heart Hospital, Korea
1029	Peripheral arterial disease among chronic kidney disease patients undergoing hemodialysis in Remedios Trinidad Romualdez Hospital Hemodialysis Unit from July 2019 to July 2020	**Van Modesto** Remedios Trinidad Romualdez Disease, Philippines
1037	Prevalence and determinants of peripheral neuropathy among adult type II diabetes mellitus patients attending a non-communicable disease clinic in Rural South India	**Prakash Mathiyalagen** Indira Gandhi Medical College & Research Institute, India
1040	A case report of primary squamous cell carcinoma in the kidney	**Jeong-Myung Ahn** Bongseng Memorial Hospital, Korea
1058	Evaluation of synergestic antiurolithiatic effect of tribulus terrestris fruit extract with selected Indian medicinal plants	**Sourabh Jain** Arihant School of Pharmacy and Bio-Research Institute, India
1066	The impact of COVID-19 pandemic on psychological and socioeconomic well-being of hemodialysis patients in Makati Medical Center: An analytical cross-sectional study	**Jane Angele Pasamante** Makati Medical Center, Philippines
1105	The higher the CKD grade, the higher the psychological stress in patients with CKD during COVID-19 pandemic	**Kyungmi Lee** Soonchunhyang University Cheonan Hospital, Korea
1138	Giant polycystic kidney disease. Need or not nephrectomy?	**Danar Anggrahini Kusuma Dewii** Gajah Mada University, RSUP.Dr.Sardjito Yogyakarta, Indonesia
1160	Persistent benign proteinuria associated with CUBN variants	**Yun Young Choi** Seoul National University Hospital, Korea
1179	In-situ thermoresponsive mucoadhesive gel for sublingual delivery of glucagon like peptide-1 receptor agonist	**Aakanchha Jain** National Institute of Pharmaceutical Education and Research, India
1258	Administration of eculizumab in atypical hemolytic uremic syndrome: Two case reports	**A Young Kim** Yeungnam University Medical Center, Korea

Others

Abstract No.	Title	Presenting Author
1271	Acute pyelonephritis prevalence, antibiotic resistance, and prognosis	**Tae Won Lee** Gyeongsang National University Changwon Hospital, Korea
1276	Practical urea reduction ratio prediction using a neural network	**Sang Hyuk Kwak** Kwak Clinic, Korea
1346	The differential roles of leptin and adiponectin on phenotype transition of human peritoneal mesothelial cells	**Hyun-Jung Kang** Ewha Womans University Medical Center, Korea
1355	Potential nephrotoxicity of ganoderma lucidum	**Heejin Cho** Chung-Ang University Hospital, Korea
1374	The effects of air pollution on mortality of chronic kidney disease according to statin usage	**In Sung Park** Dongguk University Ilsan Hospital, Korea
1391	Biological role of cephaeline against kidney disorders: Therapeutic benefit in the medicine	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
1392	Absence of nephrogenic systemic fibrosis in patients with end-stage renal disease and prophylactic hemodialysis for protection against nephrogenic systemic fibrosis	**Yeonhee Lee** Uijeongbu Eulji Medical Center, Eulji University, Korea
1411	Biological effect of engeletin on lung cancer through scientific data analysis of scientific works	**Dinesh Kumar Patel** Sam Higginbottom University of Agriculture, Technology and Sciences, India
1429	Probiotic supplementation in chronic kidney disease: A meta-analysis of the research	**Gede Wira Mahadita** Faculty of Medicine, Udayana University, Indonesia
1444	Change in ectopic fat depots after bariatric surgery is associated with improved metabolic profile	**Eui Suk Chung** Soonchunhyang University Seoul Hospital, Korea
1450	To evaluate the predictive ability of biomarkers for major adverse kidney events (Make 30) at day 30 in critically ill cirrhotic patients	**Kushal Kekan** PGIMER, India
1454	Renal outcomes of MMF induction therapy according to the histological classification in patient with Lupus Nephritis; CMC GN registry	**Jeeeun O** The Catholic University of Korea, St. Vincent's Hospital, Korea
1461	Sarcopenia, nutritional status and mortality risk assessed using bioimpedance spectroscopy in the elderly living in long-term care facility	**Hyokyeong Yu** Myongji Hospital, Hanyang University College of Medicine, Korea

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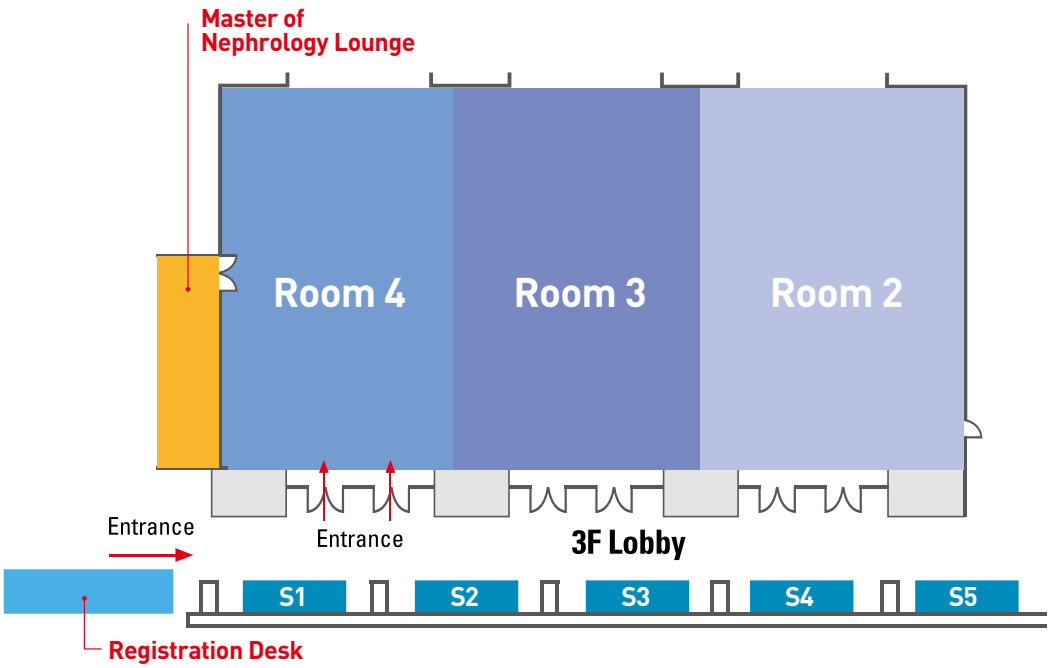

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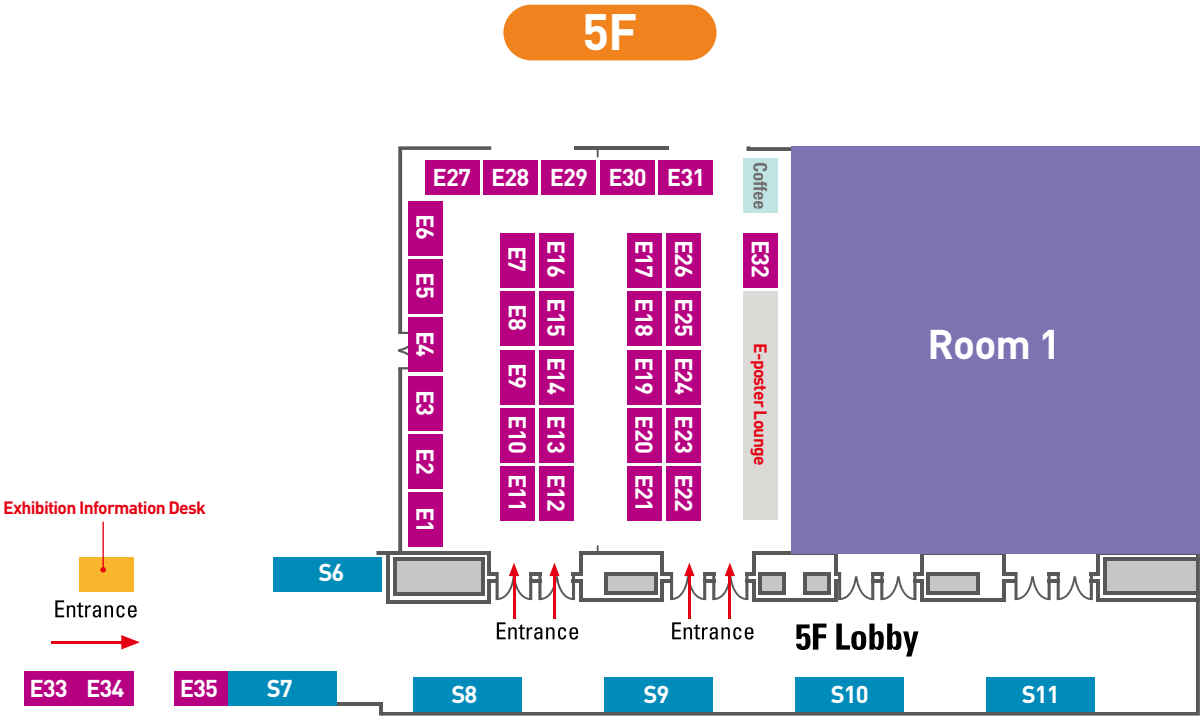

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S6	HANDOK Inc.
S7	Astrazeneca
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S9	Korea Otsuka Pharmaceutical Co., Ltd.
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S11	JW Pharmaceutical
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[References]
1. Diabetes Obes Metab. 2020 Apr 21. doi: 10.1111/dom.14061.

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Reference 1. Marbury et al, Pharmacokinetics and Safety of Intravenous Ferric Pyrophosphate Citrate: Equivalence to Administration via Dialysate. The Journal of Clinical Pharmacology 2022, 0(0) 1-8 2. 트리페릭주 제품허가사항 의약품안전나라 https://nedrug.mfds.go.kr/index Accessed APR-01-2022

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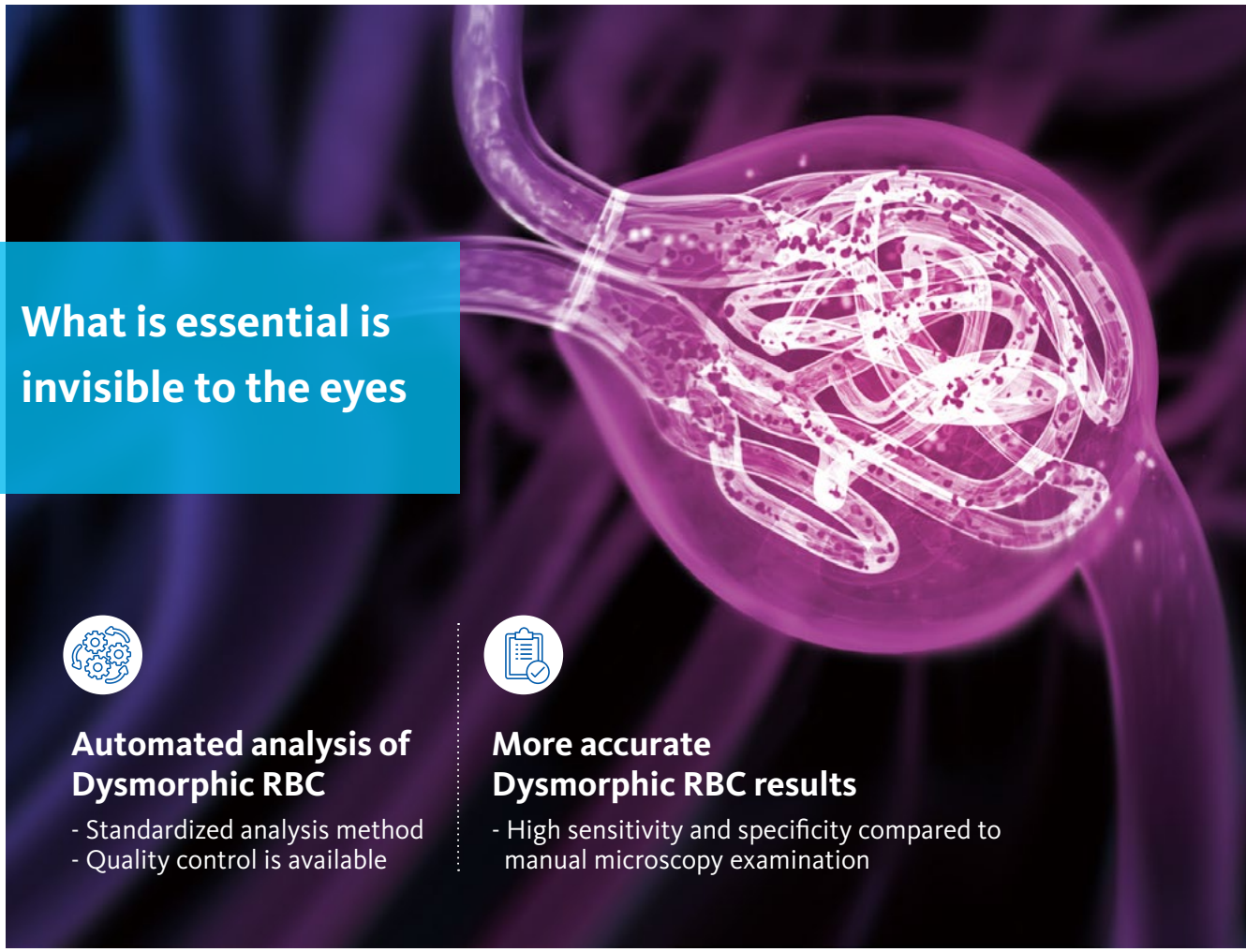

Method : >20 RBCs/uL, Validation cohort (N=107)

	AUC	*P*	Validation cohort	
			Sensitivity%	Specificity%
URD(%) *Automated Urine RBC Distribution	▲0.814	<0.001	▲89.4	▲63.3
Dysmorphic RBC(%) *Manual microscopy method	0.683	<0.001	57.7	37.5

Ref. Cho H et al. Urinary RBC distribution for glomerular hematuria. Ahn Lab Med 2022;42:160-168.

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Reference 1. 파브라자임®35밀리그램(아갈시다제베타) 국내 제품설명서(2021.01.12).

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 늦출 수 있음. 환자의 내약성이 생긴 후 주입속도는 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, 아는 주입반응으로 인하여 환자를 위험성이 더 큰 중대한 합병증에 취약하게 만들 수 있음. 4) 면역원성과 재투여 : 이 약에 대한 임상시험에서 소수의 환자가 이 약에 특이적으로 반응이 나타나는 피부반응 또는 IgE 항체를 발현하였음. **금기** 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 중증반응이었음. 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, 사지동통, 고혈압, 흉통, 안후경직, 복통, 어지러움, 빈맥, 비충혈, 설사, 말초부종, 근육통, 요통, 창백, 서맥, 두드러기, 저혈압, 얼굴부종, 발진, 홀음증. 홀음증은 이 시험이 항히스타민제로 전처치한 임상시험이기 때문에 나타날 수 있음. 중재가 필요한 대부분의 주입관련반응은 주입속도를 늦추거나 일시적으로 주입을 중지하거나하고 해열제, 항히스타민제 또는 스테로이드제제를 투여함으로써 개선됨. 보고된 또 다른 중대한 이상사례에는 뇌졸중, 통증, 운동실조증, 서맥, 삼장정지, 삼장정지, 심박졸감소, 현기증, 청각저하증과 신증후군이 있음. 2) 면역원성: 임상 시험 중 이 약으로 치료받은 121명의 성인 환자 중 95명(79%), 16명의 소아 환자 중 11명(69%)에게서 젠자임피브라자임 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 피괴성 맥관염, 림프절병, 감각저하, 구강 감각저하, 심계 항진, 콧물, 산소포화도 감소, 저산소증, 딱사구체신염 ※보다 자세한 내용은 홈페이지(www.sanofi.co.kr)나 제품설명서를 참고하시기 바랍니다. **최종문안개정연월일**: 2021.01.12

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† 2022년 2월부터 재공급 * Sitting DBP < 90 mmHg # Losartan Potassium 50 mg/Amlodipine camsylate 7.84 mg (Equivalent to amlodipine 5 mg) **AML :** Amlodipine, **DBP :** Diastolic blood pressure

Study design a. This was a double-blind, multicenter, randomized trial of hypertensive patients (N=185) aged ≥18 years taking amlodipine 5 mg during the run-in treatment period but failed to achieve sitting diastolic blood pressure (DBP) < 90 mmHg. This study compared the clinical efficacy and safety profile of fixed-dose combination of amlodipine/losartan 5/50 mg and amlodipine 10 mg monotherapy in essential hypertensive patients who respond poorly to amlodipine 5 mg monotherapy. After randomization into the amlodipine/losartan 5/50 mg fixed-dose combination group (n=92) and the amlodipine 10 mg monotherapy group (n=93), treatment was maintained without dose escalation for 8 weeks. The primary efficacy evaluation of noninferiority was tested using a confidence interval approach with a 97.5% 1-sided lower confidence limit using the average difference in DBP measured at baseline and 8 weeks. The primary end point of this study was the change in the DBP after 8 weeks of treatment relative to the baseline(visit 2) value.[1]

Reference 1. Kang SM, *et al*. Comparative Efficacy and Safety Profile of Amlodipine 5 mg/Losartan 50 mg Fixed-Dose Combination and Amlodipine 10 mg Monotherapy in Hypertensive Patients Who Respond Poorly to Amlodipine 5 mg Monotherapy: An 8-Week, Multicenter, Randomized, Double-Blind Phase III Noninferiority Study. *Clinical Therapeutics*. 2011;33(12):1953-63.

Selected Safety Information 코자®엑스큐정 (로사르탄칼륨-암로디핀 캄실산염) 5/50 mg, 5/100 mg, 10/50 mg [효능·효과] 1. 암로디핀 또는 로사르탄 단독요법으로 혈압이 적절하게 조절되지 않는 본태성 고혈압. 2. 제2기 고혈압 환자에서 치료 목표 혈압에 도달하기 위해 복합제 투여가 필요한 환자의 초기 요법 **[용법·용량]** 이 약의 권장용량은 1일 1회 1정으로, 식사와 관계없이 물과 함께 복용한다. 가능하면 매일 같은 시간에 복용할 것이 권장된다. 이 약을 투여하기 전에 개개의 성분(암로디핀 또는 로사르탄)으로 용량을 조절할 것이 권장되나, 다음과 같이 개개의 성분에 대한 단독요법으로 혈압이 조절되지 않는 경우 이 약으로 바로 전환하는 것을 고려할 수 있다. 암로디핀과 로사르탄을 병용으로 복용하고 있는 환자인 경우, 복용의 편리함을 위하여 이 약(개개의 주성분 함량이 동일한 복합제)으로 전환할 수 있다. 제2기 고혈압 환자에게 이 약을 초기요법으로 투여하기 전에, 기저치 혈압, 치료 목표 혈압, 단일제 대비 복합제의 예상 치료 목표 도달 정도 등을 고려하여 투여 여부를 결정해야 한다. 통상 이 약 5/50 밀리그램을 1일 1회 투여하며, 2주간 투여 후에도 혈압이 충분히 조절되지 않는 경우, 1일 1회 10/50 밀리그램으로 증량할 수 있다. **[경고]** 1) 임부에게 레닌-안지오텐신-알도스테론계(RAAS)에 직접 작용하는 약물들의 투여 시, 태아 및 신생아에게 손상 및 사망까지도 일어날 수 있다. 양수과소증의 발생은 태아의 폐형성 저하증 및 골격 기형과 관련이 있을 수 있다. 신생아에게 나타날 가능성이 있는 부작용은 두개골 형성 저하증, 무뇨증, 저혈압, 신부전과 사망 등을 포함한다. 임신이 확인되면 가능한 빨리 이 약을 중단해야 한다. 2) 혈관 내 유효 혈액량 감소 환자. 로사르탄의 경우 혈관 내 유효 혈액량 감소(intravascular volume depletion)환자(예를 들어, 이뇨제를 투여 받고 있는 환자)에 이 약을 처음 투여하였을 때 저혈압 증상이 나타날 수 있으므로, 이 약 투여 전에 이러한 증상들을 치료해야 한다. 만약, 로사르탄 1일 1 회 25 mg 투여가 권장되는 경우, 이 약으로는 로사르탄 25 mg 투여가 가능하지 않으므로, 이러한 환자에 대하여 투여하지 않도록 한다. **[금기]** 1) 이 약의 주성분 및 디히드로피리딘계 유도체에 과민증이 있는 환자 2) 임부 또는 임신하고 있을 가능성이 있는 여성 3) 중증의 간기능 장애 환자 4) 중증 대동맥협착증 환자 5) 속 환자 6) 당뇨병이나 중등도~중증의 신장애 환자(사구체여과율 <60 mL/min/1.73 m^2)에서 알리스키렌 함유제제와의 병용 **[신중투여]** 1) 혈관 내 유효 혈액량 감소 환자(예, 이뇨제 투여 중인 환자) 2) 염격한 염분제한 환자 3) 중등도~중증 신장애 환자(예, creatinine clearance <20 mL/min) 및 투석 환자 4) 고칼륨혈증 환자 5) 레닌-안지오텐신-알도스테론계(RAAS)의 이중차단 : 안지오텐신 수용체 차단제(ARB), ACE 억제제, 또는 알리스키렌 등 레닌-안지오텐신-알도스테론계(RAAS)에 영향을 미치는 다른 약제의 병용은 권장되지 않는다. **[이상반응]** (1) 임상시험 결과. 이 약(암로디핀/로사르탄 복합제)에 대한 안전성은 본태고혈압 환자를 대상으로 8주간 투여한 3개의 임상시험(임상시험 201, 임 상시험 301 및 임상시험 302) 및 stage 2 고혈압 환자를 대상으로 8주간 투여한 임상시험 303을 통해, 총 794명의 고혈압 환자 중 암로디핀/로사르탄 복합제를 투여 받은 398명을 대상으로 평가되었다. 이상반응에 대한 발현 빈도는 다음과 같다. [신경계] 어지러움, 두통, 졸음, 뇌경색 [전신 이상 및 투여 부위 반응] 무력증, 흉부 불편감, 흉통, 조기 포만감, 말초부종, 오목부종 [위장관 이상] 복부 불편감, 소화불량, 구역, 역류성 식도염, 변비 [피부 및 피하조직 이상] (전신성)가려움증, 전신성 두드러기 **[심장이상]** 심계항진 [혈관이상] 홍조, 기립성 저혈압, 안면홍조 [호흡기계, 흉부 및 종격 이상] 호흡곤란, 기침 [감각기관 이상] 어지러움, 안구충혈 [신장 및 방광 이상] 빈뇨 (2) 국내 시판 후 조사. 국내에서 재심사를 위하여 6년 동안 658명을 대상으로 실시한 시판 후 조사 결과, 이상사례의 발현율은 인과관계와 상관없이 3.19%(21/658명, 총 25건)로 보고되었다. 이 중 중대한 이상사례의 발현율은 0.46%(3/658명, 4건)로 관절통, 수면 무호흡 증후군, 자궁탈출 각 0.15%(1/658명, 1건), 이 약과 인과관계를 배제할 수 없는 중대한 이상사례는 보고되지 않았다. **[일반적 주의]** 1) 혈압 강하 작용에 의한 어지러움이 나타날 수 있으므로 고소작업, 자동차운전 등 위험이 수반되는 기계조작을 하지 않도록 주의한다. 2) 암로디핀의 경우 혈장농도 반감기가 길어 투여를 중지한 후에도 완만한 혈압 강하 작용이 나타나므로, 투여 중지 후 다른 혈압 강하제를 투여하는 경우에는 용량 및 투여간격에 주의하고 환자의 상태를 관찰하면서 신중히 투여한다. 3) 과민반응 : 혈관부종 (4. 이상반응 항 참조) 4) 간장애 환자 : 간경변증 환자의 혈장 로사르탄 농도가 현저히 상승되었다는 보고가 있으므로, 간기능 장애가 있는 환자 중 로사르탄의 투여용량 감량이 요구되는 경우 이 약의 투여가 권장되지 않는다. 5) 신장애 환자 : 레닌-안지오텐 신-알도스테론계에 대한 영향의 결과, 신기능의 변화가 보고되었다. 이러한 신기능의 변화는 투여 중단 시 정상으로 회복되었다. 신기능이 레닌-안지오텐신-알도스테론계에 의존적인 환자의 경우(예, 중증의 울혈성 심부전 환자), ACE 억제제를 투여하였을 때, 빈뇨 및/혹은 진행성 질소혈증이 보고되었으며, (드물게) 급성 신부전 및/혹은 사망이 보고 되었다. 유사한 결과가 로사르탄을 투여한 환자에서도 보고되었다. ACE 억제제가 양측성 혹은 편측성 신동맥 협착증을 갖는 환자들의 혈중 요소와 혈청 크레아티닌치를 상승시켰다는 보고가 있다. 로사르탄을 투여한 환자에서도 유사한 결과가 보고되었다. : 이는 투여 중단 시 회복되었다. 6) 고칼륨혈증(혈청 칼륨 >5.5 mmol/L)이 로사르탄 단일제 투여환자 중 1.5%의 환자에게서 발생하였으나 약물투여를 중단할 정도는 아니었다. 혈청 칼륨 농도를 증가시킬 수 있는 다른 약물과의 병용은 고칼륨혈증을 일으킬 수 있다. 이 약과 칼륨보존이뇨제, 칼륨보충제, 칼륨을 함유한 염분 대용제 또는 칼륨 수치를 상승시킬 수 있는 다른 약물과 병용 시(특히, 노인과 신장애 환자)에는 주의하여야 하며, 칼륨 수치를 주의깊게 모니터링 해야 한다(6. 상호작용 항 참조). 7) 로사르탄의 투여로 인해 일과성의 혈압저하(속즙성, 의식상실, 호흡곤란 등을 동반)을 일으킬 수 있으므로 그러한 경우에는 투여를 중지하고 적절한 처치를 한다. 특히, 다음 환자에 투여 시 환자의 상태를 충분히 관찰하여야 하며, 만약, 로사르탄 1일 1회 25 mg 투여가 권장되는 경우, 이 약으로는 로사르탄 25 mg 투여가 가능하지 않으므로, 이러한 환자에 대해 투여하지 않도록 한다. - 혈관 내 유효 혈액량 감소 환자(예, 이뇨제 투여 중인 환자) - 염격한 염분제한 환자 - 중등도~중증 신장애 환자(예, creatinine clearance : 20 mL/min 미만) 및 투석 환자 **[상호작용]** 다른 혈압 강하제와 병용하는 경우에는 작용이 증강될 수 있으 므로 신중히 투여한다. **[임부 및 수유부에 대한 투여]** 1) 임부 (1) 암로디핀의 임부에 대한 안전성은 확립되지 않았다. 인체에 대한 최대 권장용량인 5.0mg의 해당하는 용량의 암로디핀을 투여한 랫트에서 분만 지연 및 연장이 나타났다. (2) 레닌-안지오텐신-알도스테론계에 직접적으로 작용하는 약물군은 발달 중인 태아의 손상 및 사망까지도 초래할 수 있다. 로사르탄은 임신 중에 사용해서는 안 되며, 임신이 확인되면 가능한 빨리 투약을 중지한다. 사람의 경우, 태아의 신장 관류는 레닌-안지오텐신계의 발육에 따라 임신 2기에 시작되므로, 임신 2, 3기에 이 약을 투여 시 태아에게 미치는 위험은 증가한다. 임신 2~3기 사이에 레닌-안지오텐신-알도스테론계에 직접 작용하는 약물군이 투여는 태아 및 신생아의 저혈압, 고칼륨혈증, 신생아 두개골 형성저하증, 요감소 그리고/혹은 무뇨증, 가역적 또는 비가역적인 신부전, 자궁 내 성장 지체 및 사망을 포함하여 태아 및 신생아 손상과 연관성이 있었다. 태아 신기능 감소 때문인 것으로 추측된 양수과소증이 보고 되었고, 양수과소증은 태아 사지구축, 두개안면 기형 및 폐형성 저하증과 연관성이 있었다. 또한 이 약에 의한 것인지 명확하진 않지만 미숙, 자궁 내 발육 지연, 동맥관 열림증이 나타났다는 보고가 있다. 역학자료에서 임신 1기에 ACE 저해제에 노출된 경우 최기형성 위험에 대한 증거는 명확하지 않으나, 어느 정도의 위험 증가를 배제할 수 없다. 안지오텐신수용체차단제의 위험성에 대한 통제된 역학자료는 없으나, 이 계열 약물들에도 유사한 정도의 위험성이 나타날 수 있다. 임신 기간 동안 임부의 고혈압을 적절히 관리하는 것은 임부와 태아 모두에게 최적화된 결과를 주는 데 중요하다. 드물지만 레닌안지오텐신 계에 영향을 미치는 약물에 대한 적절한 대체약물이 없는 경우(대체로 천 명의 임부 중 한 명꼴 이하로 발현) 임부에게 태아에 대한 잠재적인 위험을 인지시켜야 하며, 양막 내 환경을 확인하기 위해 일련의 초음파 검사를 실시하여야 한다. 양수과소증이 관찰될 경우, 임부의 생명을 구하기 위한 경우를 제외하고는 이 약의 투여를 중단해야 한다. 임신 주수에 따라서 수축스트레스검사(Contraction Stress Testing), 비부하검사(Non-stress Test) 혹은 생물이학적 프로파일(Biophysical Profiling) 등의 검사가 정상일 수 있다. 하지만 태아에게 이미 비가역적 장애가 발생한 이후에도 양수과소증이 나타나지 않을 수 있다. 자궁 내에서 안지오텐신계 수용체 차단제에 노출된 경험이 있는 신생아, 영·유아의 경우 저혈압, 소변감소증 및 고칼륨혈증이 있는지 면밀히 관찰해야 한다. 만약 소변감소증이나 저혈압이 나타난다면, 혈압 및 신장관류에 대한 직접적인 관리를 해야 한다. 저혈압을 회복시키고, 저하된 신기능을 대신하기 위해 교환수혈이나 투석을 할 수도 있다. 로사르탄칼륨은 랫트의 태자 및 새끼에서 체중 감소, 육체/행동 발달 지연, 사망률 및 신장독성을 포함한 이상반응을 유발시켰다. 신생자에서의 체중증가율 감소(10 mg/kg/day의 낮은 투여용량에서 영향 받은 것임)를 제외하고는, 이러한 이상반응들이 발현된 것은 25 mg/kg/day을 초과한 투여용량에서였다(mg/m^{2}에 근거하여 사람의 최대 권장용량인 100 mg의 약 3배에 해당됨). 이러한 이상반응들은 임신말기 및 수유 중 약물의 노출에 기인한 것이다. 만약 소변감소증이나 저혈압이 나타난다면, 혈압 및 신장관류에 대한 직접적인 관리를 해야 한다. 저혈압을 회복시키고, 저하된 신기능을 대신하기 위해 교환수혈이나 투석을 할 수도 있다. 2) 수유부. 사람에서 암로디핀 및/또는 로사르탄의 유즙 분비 여부는 알려지지 않았으나, 동물시험에서 암로디핀 및 로사르탄의 활성대사물의 모유 중으로의 이행이 보고되었으므로 수유 중에는 투여하지 않는다. **[소아에 대한 투여]** 만 18세 이하의 소아환자에 대한 안전성 유효성이 확립되어 있지 않으므로, 이 약의 투여가 권장되지 않는다. **[고령자에 대한 투여]** 75세 이상의 고령자에 대해 로사르탄의 초회 용량으로 1일 1회 25 mg 이 권장되나, 이 약으로는 로사르탄 25 mg 투여가 가능하지 않으므로, 초기 치료 시 이 약(복합제)을 투여하는 것은 권장되지 않는다. 개정년월일 : 2021년 3월 4일

※ 처방하시기 전에 제품설명서를 참고하시기 바랍니다

[수입자/품목허가권자]

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적용

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[Product Information]

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KR2205021352

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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. 혈압강하효과는 치료시작 후 2주 이내에 나타나며 약 4주 정도에 최대효과가 나타난다. 이 약 단독 투여로 혈압이 조절되지 않는 경우, 다른 혈압강하제(이뇨제(예: 클로르탈리돈, 히드로클로로티아지드)나 칼슘채널차단제)와 병용투여 시 추가적인 혈압강하효과가 나타날 수 있다. **[사용상의 주의사항] 1. 경고** 1) 임신2, 3기인 임부에 레닌-안지오텐신계(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 신장애(사구체여과율<60mL/min/1.73m²)환자 **[저장방법]** 차광기밀용기, 실온(1~30℃)보관, 습기를 피하여 보관 **[수입판매자]** 셀트리온제약·충청북도 청주시 청원구 오창읍 2산단로 82 **[제 조자]** Takeda Ireland Limited

*** 이 내용은 허가사항을 요약한 것으로 자세한 정보는 제품의 첨부문서 또는 https://nedrug.mfds.go.kr를 확인하십시오.**

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The 1st released Calcium polystyrene sulfonate agent in Korea[1,*]

The most prescribed treatment agent for Hyperkalemia in Korea[2]

Various formulations developed in consideration of taking convenience (Powder/Granule/Suspension)[1,3]

Treatment agent for Hyperkalemia

KALIMATE

Powder / Granule / Suspension

REFERENCES

1. KALIMATE Powder, Granule, Suspension - Product information from Ministry of Food and Drug Safety. Available at https://nedrug.mfds.go.kr/seachDrug - Drug search - KALIMATE Accessed on 06-Jan-2022.
2. 2021, 3Q MAT, IQVIA Data 기준 (Sales data of Calcium polystyrene sulfonate in Korea)
3. Data on file, Alvogen Korea

* KALIMATE powder is the 1st released calcium polystyrene sulfonate agent in 1984 in Korea, through the licensing with the originator, Nikken(now Kowa) from Japan.

카리메트 산/과립

[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 잡아준다. 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(폴리스티렌설폰산-나트륨)의 소르비톨 현탁액 경구투여시 소장내 천공, 장점막 괴사, 소장중양과 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) ※ 자세한 내용은 제품설명서 전문을 참고하시기 바랍니다.

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. (중력) 9. 적용상의 주의 1) 이 약은 경구로만 투여한다. 2) 이 약의 유사 약물(폴리스티렌설폰산나트륨)의 소르비톨 현탁액 경구투여시 소장내 천공, 장점막 괴사, 소장중양과 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) ※ 자세한 내용은 제품설명서 전문을 참고하시기 바랍니다.

수입자 (카리메트현탁액)

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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.[1]

† 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.

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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 malabsorption. **[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 dete **[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, hypothenam 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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THE KOREAN SOCIETY OF NEPHROLOGY

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