Omega 3 fatty acid ameliorate the puromycin induced podocyte injury.

Jiwon Lee1, Hyunsu Choi4, Jin Young Jeong3, Yoon-Kyung Chang2, Ki Ryang Na3, Kang Wook Lee3, Jwa-Jin Kim4
1Department of Pediatrics-Nephrology, Chungnam National University School of Medicine, Korea, Republic of
2Department of Internal Medicine-Nephrology, The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea, Republic of
3Department of Internal Medicine-Nephrology, Chungnam National University School of Medicine, Korea, Republic of
4Department of clinical research center, The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea, Republic of

Objectives:
Podocyte injury are activation of autophagy, including mitophagy, is considered to be an important factor in podocyte injury. Recent our study revealed that omega 3 increased autophagic flux in acute kidney injury models. In this work, we identified the role of omega-3 in autophagy in the puromycin-induced podocyte injury model.

Methods:
We used the immortalized mice podocytes. Puromycin was treated in podocyte by dose and time. Omega 3 (EPA, DHA) were treated in podocyte with vehicle or puromycin by dose and time. Autophagic markers are evaluated. Oxidative stress and autophagic markers and cytoskeleton stains were evaluated.

Results:
Puromycin treatment increased the stress fiber(f-actin). Omega 3 treatment improved the f-actin fragmentation in puromycin treated podocytes. Omega 3 treatment Box/Bcl2 ration in puromycin treated podocytes. Puromycin treatment increased the LC3 in immortalized podocytes. However, omega 3 treatment increased the LC3 in puromycin treated podocytes, compared to vehicle treated podocytes. p62 was decreased in both omega 3 and vehicle treated puromycin injured podocytes.

Conclusions:
Omega 3 amerliorates the puromycin induced podocyte injury.