

**PP14****Change of oxidative stress before and after ESWL for patients with ureteral stone**S.S.-S. Chen¹, A.W. Chiu²¹ Division of Urology, Taipei City Hospital Renai Branch, Taipei, Taiwan² Department of Urology, National Yang-Ming University School of Medicine, Taipei, Taiwan

Purpose: To evaluate the change of oxidative stress before and after extracorporeal shock wave lithotripsy (ESWL) for patients with ureteral stone.

Materials and Methods: Forty patients with unilateral single ureteral stone and receiving ESWL were recruited in this study. The parameters for comparison included severity of hydronephrosis (mild, moderate and severe) by ultrasonography, stone size, shock wave numbers and KV. The oxidative stress and antioxidant capacity were evaluated by measuring malondialdehyde (MDA), mitochondrial DNA (mtDNA) copy number and total capacity of antioxidants (TOA) in the blood. The data were correlated with serum creatinine, which were measured before and immediately after ESWL in all patients.

Results: Serum creatinine increased (1.22 ± 0.23 vs. 1.43 ± 0.25 mg/dL), MDA (16.3 ± 2.9 vs. 24.1 ± 6.3 M) was increased and TOA (159.7 ± 55.2 vs. 78.6 ± 34.3 mM) decreased in all the patients immediately after ESWL compared with the data before ESWL. Fifteen patients with severe hydronephrosis had significantly higher MDA (24.9 ± 2.8 vs. 22.1 ± 5.1 M), lower mtDNA copy number (0.21 ± 0.11 vs. 0.31 ± 0.11), and lower TOA (58.7 ± 27.2 vs. 71.4 ± 30.5 mM) immediately after ESWL than did those (25 patients) with mild and moderate hydronephrosis. By multiple regression, severe hydronephrosis, larger ureteral stone, higher shock wave numbers and KV were associated with higher oxidative stress and lower antioxidant capacity immediately after ESWL. Besides, negative correlation was found between oxidative stress and renal function immediately after ESWL.

Conclusions: An increase of MDA and decrease of TOA in blood in all the patients immediately after ESWL, which might induce renal damage. Moreover, the oxidative stress levels in blood was higher and antioxidant capacity was lower in patients who had severe hydronephrosis, larger ureteral stone, and receive higher shock wave numbers and KV.