The Clinical Factors Influencing Advanced Oxidation Protein Products in Maintenance Hemodialysis Patients

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Background : Oxidative stress has long been demonstrated in hemodialysis (HD) patients. Also, advanced oxidation protein products (AOPP) measurement is proposed to be a reliable marker for the extent of protein oxidation damage in uremic patients. However, the clinical factors influencing AOPP have not been characterized extensively in these patients. The present study is to investigate the influence of clinical factors known to be associated with oxidative stress in maintenance HD patients.

Methods : In the present study, we determined the plasma levels of AOPP in 102 maintenance HD patients, and correlation between AOPP and clinical factors.

Results : AOPP in HD patients is increased than in normal control group (respectively 52.31±16.19 vs 40.25± 12.30 μmol/L, p=0.0001). No influence of age, diabetes, and CRP on plasma AOPP levels was detected in these HD patients. Significant positive correlation was observed between duration of dialysis treatment and plasma levels of AOPP (r=0.2, p=0.04). But, there was only weak correlation (r=0.19, p=0.052) between duration of dialysis treatment and plasma levels of AOPP after controlling for CRP and age.

Conclusion : Our results suggest that duration of dialysis may be weak, but important factor relating to oxidative stress in HD patients, and measurement of AOPP can not be replaced by clinical factors such as age and CRP in evaluating the degree of oxidative stress in HD patients.

Key Words : HD, AOPP, Oxidative stress