Pulse Pressure as a Risk Factor for QT Dispersion in Continuos Ambulatory Peritoneal Dialysis Patients

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Introductions and Aims: QT dispersion (QTd) indicates regional variation in ventricular repolarization, and is a well known predicting factor for identifying patients with an increased risk of ventricular arrhythmias or sudden death in various conditions including end stage renal disease (ESRD) patients who have higher risks of cardiovascular mortality and sudden death. QTd in ESRD patients is increased, and hemodialysis is proved to increase QTd. There has been little study of QTd in CAPD patients. Pulse pressure (PP) is a prominent cardiovascular risk factor and reflects arterial stiffness. PP may impact on myocardium as a mechanical stress and determine cardiac damage, which implies that PP may be related with QTd. QTd and PP both seem to be associated with cardiovascular risk or sudden death. However, the relationship between these two factors in CAPD patients was not studied to date. Thus we purposed to investigate QTd in CAPD patients and the relation of pulse pressure with QTd.
Methods: We studied total 74 patients who initiated CAPD between 2000 and 2005. All data were recruited from the patients' medical records. QT interval was measured on the surface 12 leads electrocardiogram at least twice by different investigators.
Results: QTd and PP in CAPD patients were 67.0±26.29 msec and 58.58±18.04 mmHg respectively. A significant positive correlation was observed between QTd and PP in CAPD patients ($r=0.739$, $p<0.0001$). When patients were subdivided into three groups according to PP, QTd was prolonged most severely in patients with PP>80 mmHg (n=11, 108.5±30.56 msec) and it was significantly different among groups ($p<0.0001$). This association was found to be observed irrespective of patients' factors such as DM, HiBP, cardiomegaly, serum Ca, serum P, serum Na, serum K and medications. In addition to PP ($p<0.0001$), cardiomegaly in chest PA was also revealed as an independent risk factor for QTd in linear regression analysis ($p=0.012$).
Conclusion: Pulse pressure in CAPD patients was revealed to have a significant correlation with QTd. Cardiomegaly was also identified as an independent risk factor for QTd in CAPD patients. These findings suggest that the detrimental effects of PP in CAPD patients may manifest through QTd prolongation.

Key Words: 복막투석, 맥압
Peritoneal dialysis, Pulse pressure