

비당뇨 혈액투석 환자에서 QT interval, QT dispersion과 갑상선 호르몬 사이의 상관관계

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The Relationship between Thyroid Hormone and Corrected QT Interval and QT Dispersion in Non-diabetic Hemodialysis

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Purpose : Cardiovascular disease and sudden cardiac death are common in hemodialysis. These cardiac complications are often associated with prolong QTc interval (QTc) and QTc dispersion (QTcd). Also, subclinical hypothyroidism is associated with the risk of heart failure, other cardiovascular events and death. The purpose of this study was to evaluate the relationship between thyroid hormone and QTc, QTcd in non-diabetic hemodialysis patients.

Method : We studied 29 hemodialysis patients (13 male and 16 female; mean age 54.06 ± 14.72 years) without thyroid disease. The patients had a 12-lead ECG performed immediately after hemodialysis. The blood sampling was performed before hemodialysis for the measurement of biochemical parameters, TSH, fT4, T3. The patients was divided to two groups according to QTc (group 1; QTc <430 ms, group 2; QTc \geq 430 ms). We examined the relationship between QTc, QTcd and thyroid hormone of two groups, respectively and compared the two groups.

Results : The underlying renal disease were HTN 55.2%, GN 20.7%, ADPKD 10.3%, unknown 13.7%. The mean of hemodialysis duration, Kt/V, nPCR, BMI was 63.72 ± 42.78 months, 1.48 ± 0.20 , 0.88 ± 0.22 g/kg/d, 23.03 ± 3.93 kg/m², respectively. Group 1 (male 5, female 8) include HTN 7, GN 5, unknown 1 patients and group 2 (male 8, female 8) included HTN 9, GN 1, ADPKD 3, unknown 3 patients. In group 1, the means of homocysteine, TSH, T3, fT4 were 14.79 ± 4.26 umol/L, 2.50 ± 2.52 uIU/mL, 1.06 ± 0.20 ng/mL, 0.96 ± 0.16 ng/dL and in group 2, 18.47 ± 3.84 umol/L, 4.66 ± 10.85 uIU/mL, 1.09 ± 0.16 ng/mL, 0.99 ± 0.83 ng/dL. In group 1, QTc and QTcd were not significant correlation with TSH, T3, fT4. In group 2, QTc was significant positive correlation with TSH ($p < 0.05$) and QTcd was not significant correlation with thyroid hormone. There was no significant difference between two groups, except for homocysteine.

Conclusion : We suggest that subclinical hypothyroidism may be associated with prolong QTc and QTcd in non-diabetic hemodialysis.