

해녀에서의 호흡정지 다이빙과 관련한 신장기능

제주한라병원 내과

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The association of Kidney Function with Repetitive Breath-hold Diving Activities of Haenyeo, Korean Women Unassisted Diver

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Background: The effects of repetitive deep breath-hold diving on cardiovascular, respiratory, and metabolic adjustments have been reported in previous studies, which include bradycardia, vasoconstriction of selected vascular beds, depressed metabolism, and decreased respiratory exchange ratio. However, renal response to high-pressure and hypoxic environment associated with diving has not investigated yet. We aimed to examine the association between kidney function and breath-hold diving activities of Korean women divers, haenyeo who traditionally harvest marine products controlling breathing without any apparatus in Jeju province.

Methods: A cross-sectional study was performed using the medical records of 1,920 women divers and 3,220 non-divers women who presented to a hospital for health check-up. Using propensity score matching, 647 women diver/non-diver were paired and the prevalence of chronic kidney disease (CKD; estimated GFR<60ml/min/1.73m²) was investigated in both diver and non-diver groups.

Results: Women divers were older and showed higher prevalence of comorbidities (hypertension, cardiovascular disease, and diabetes) than non-divers in unmatched cohort. Women diver group showed an increased prevalence of CKD compared to non-diver group after propensity score matching (11.6% vs 7.1%; p=0.006). In multivariable analysis, women diver group remained a significant association with prevalence of CKD in unmatched cohort (OR, 1.971; 95% CI, 1.478-2.627; p<0.001). In the matched cohort, women diver group also significantly associated with a higher adjusted OR of CKD (OR, 1.898; 95% CI, 1.204-2.993; p=0.006).

Conclusion: Kidney function was more decreased in women divers compared to non-divers, suggesting that prolonged repetitive breath-hold diving may exert adverse influence on kidney function.

Key Words: 신장기능, 해녀, 다이빙

Kidney function, Haenyeo, Diving