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Low serum bicarbonate predicts residual renal function loss in peritoneal dialysis patients

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Background and Aims: Low residual renal function (RRF) and serum bicarbonate are associated with adverse outcomes in peritoneal dialysis (PD) patients. However, a relationship between the two has not yet been determined in these patients. Therefore, this study aimed to investigate whether low serum bicarbonate has a deteriorating effect on RRF in PD patients. **Methods:** This prospective observational study included a total of 405 incident patients who started PD between January 2,000 and December 2005. We determined risk factors for complete loss of RRF using competing risk methods and evaluated the effects of time-averaged serum bicarbonate (TA-Bic) on the decline of RRF over the first 3 years of dialysis treatment using generalized linear mixed models. **Results:** During the first 3 years of dialysis, 95 (23.5%) patients became anuric. The mean time until patients became anuric was 20.8 ± 9.0 months. After adjusting for multiple potentially confounding covariates, an increase in TA-Bic level was associated with a significantly decreased risk of loss of RRF (HR per 1 mEq/L increase, 0.84; 0.75 to 0.93; $p = 0.002$), and in comparison to TA-Bic ≥ 24 mEq/L, TA-Bic < 24 mEq/L conferred a 2.62-fold higher risk of becoming anuric. Furthermore, the rate of RRF decline estimated by generalized linear mixed models was significantly greater in patients with TA-Bic < 24 mEq/L compared with those with TA-Bic ≥ 24 mEq/L (-0.16 vs-0.11 mL/min/month/1.73 m^2, $p < 0.001$). **Conclusions:** In this study, a clear association was found between low serum bicarbonate and loss of RRF in PD patients. Nevertheless, whether correction of metabolic acidosis for this indication provides additional protection for preserving RRF in these patients is unknown. Future interventional studies should more appropriately address this question.

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ANCA associated vascultis에서 rapidly progressive glomerulonephritis 1예

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ANCA associated vascultis는 systemic autoimmune diseases로 unknown cause에 의하여 small to medium sized blood vessels을 침범하는 질환이다. 비교적 흔하지 않은 질환이지만 치료를 받지 않을 시 rapidly develop 하여 multiorgan failure 및 death를 유발할 수 있는 disease로 early diagnosis 및 treatment를 통하여 end organ damage 예방할 수 있다. 저자들은 lung infiltration부터 시작된 vasculitis의 악화양상이 acute renal failure로 빠르게 진행하는 환자를 경험 하였기에 보고하는 바이다. URI 증상과 dyspnea 동반되면서, chest X-ray의 Lt. multifocal lung consolidation으로 호흡기내과 입원치료 중 antibiotics 사용에도 호전되지 않고 BUN/Cr 지속적으로 상승되는 양상이 있어 신장내과 전과, ANCA associated vascultis 및 immunosuppressant를 자의로 중단 과거력에 따라 vasculitis 악화에 의한 lung and kidney infiltration 의심되어 kidney biopsy 시행하였고 crescentic glomerulonephritis with segmental sclerosis 소견이 관찰되고 있었다. rapidly progressive glomerulonephritis 진행함에 따라 hemodialysis, plasmapheresis 시행하고, immunosuppressant 치료 후 증상 및 Lab 호전 양상을 보여 퇴원하였다. ANCA associated vascultis는 흔하지 않은 질환으로 다양한 임상양상을 나타낼 수 있다. 치료가 임의로 중단되거나 조기에 치료를 받지 않을 경우 빠르게 진행하여 multiorgan failure 유발하는 질환으로 본 증례는 호흡기증상을 통하여 pneumonia 의심하에 치료 중 acute renal failure 급격히 진행하는 양상으로 진행하여 past history와 kidney biopsy를 통하여 vascultis가 악화가 원인임을 진단하였고 적절한 진단과 치료를 통하여 임상양상의 회복을 가져 왔다는 점에서 주목할 만하다.