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BACKGROUND

- Imbalance of trace elements in HD patients is recognized but, with the exception of aluminum, has not been systematically studied.
- Accumulation of chromium in HD patients was previously detected, but its time course and its relation to residual renal function is not known.
- The aim of this study was to evaluate the association of serum chromium level in chronic HD patients with dialysis vintage and residual renal function.

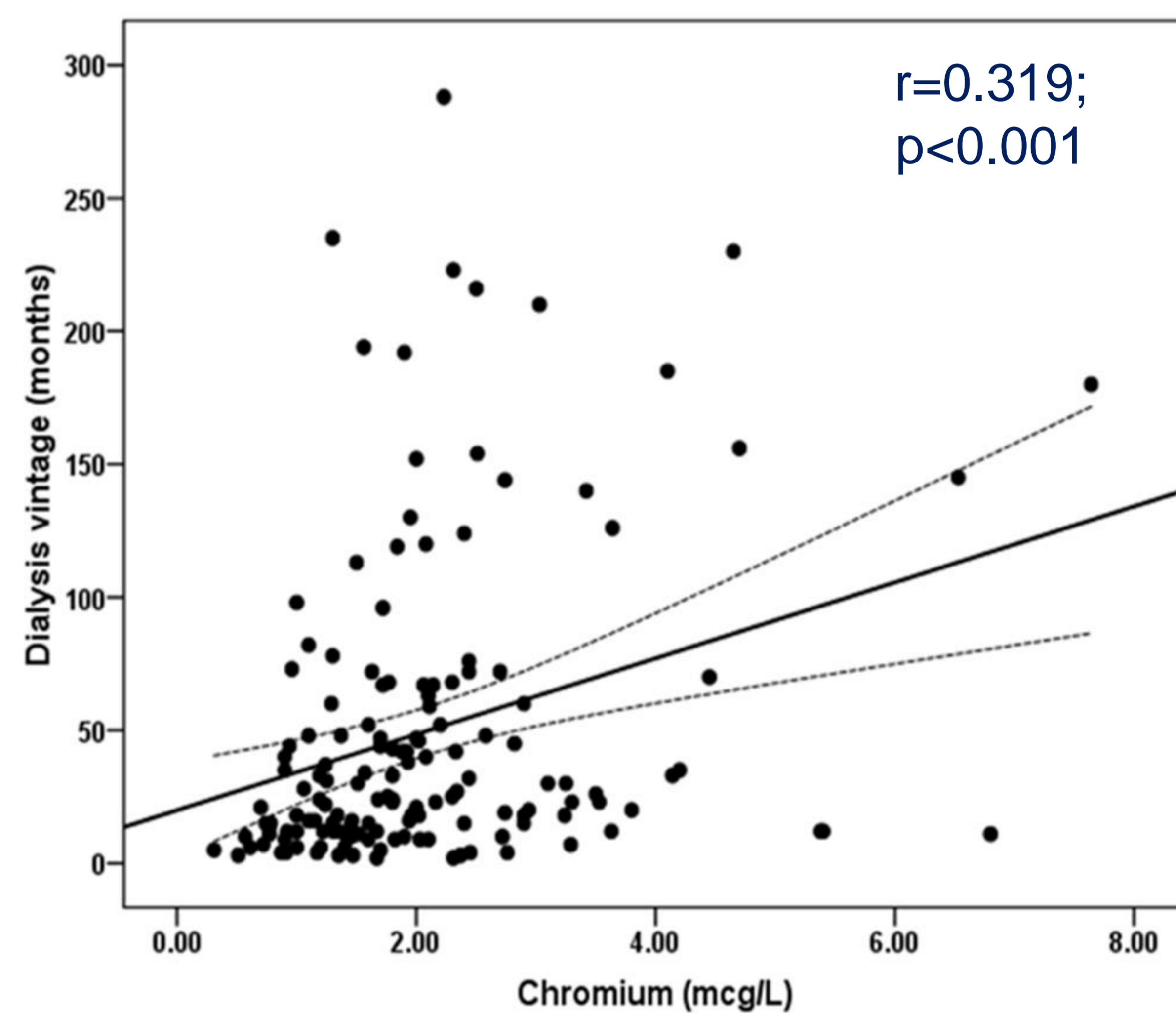
METHODS

- Midweek predialysis serum level of chromium was measured in chronic HD patients by atomic absorption spectrometry.
- The patients were divided into tertiles according to serum chromium levels.
- In patients having at least 100 of daily urine output we accessed a residual renal function through a midweek intradialytic urine collection for the measurement of urine output and calculation of GFR.

RESULTS.

- The study included 148 chronic HD patients.
- Mean age was 65.9±15.2 years.
- Vintage on HD: 25.5 (12–66) months.
- In a univariate analysis chromium level had a positive correlation with dialysis vintage ($r=0.319$; $p<0.001$; **see Figure**) and negative correlation with residual urine output ($r=-0.256$; $p=0.002$) and residual GFR ($r=-0.261$; $p=0.001$).
- In multivariate linear regression analysis dialysis vintage remained a significant predictor of serum chromium level ($\beta = 0.192$; $p=0.033$), while residual GFR lost its predictive significance ($\beta = -0.009$; $p=0.936$).

FIGURE. Serum chromium level positively correlated with HD vintage.



CONCLUSION

In chronic hemodialysis patients serum chromium accumulation associates with dialysis vintage independently of residual renal function.

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