



Relationship between serum creatinine and obesity in children in Xinjiang, China

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ABSTRACT. This study was designed to analyze the relationship between serum creatinine and body mass index in children in Xinjiang, China. We used a stratified sampling method to select 5222 children aged 6-17 years in 3 areas in Xinjiang and then measured serum creatinine with an enzymatic method. Our analysis showed that the mean serum creatinine of the various age groups differed, and the reference value increased gradually with age. In the groups with subjects older than 10 years, the serum creatinine values had a positive correlation with body mass index ($r = 0.016$, 10- and 11-year-olds; $r = 0.177$, 12- and 13-year-olds; $r = 0.314$, 14- and 15-year-olds; $r = 0.380$, 16- and 17-year-olds; $P < 0.05$). In the multivariate regression analysis model, the positive relationship existed even after we removed influencing factors such as blood sugar and cholesterol ($\beta = 0.041$, 10- and 11-year-olds; $\beta = 0.081$, 12- and 13-year-olds; $\beta = 0.183$, 14- and 15-year-olds; $\beta = 0.171$, 16- and 17-year-olds; $P < 0.05$). Obesity is an independent risk factor associated with increasing serum creatinine levels in children aged more than 10 years. Weight control is important in the protection of renal function.

Key words: Serum creatinine; Obesity; Body mass index; Children; Renal function