

原著

加齢による尿中物質の変動

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Changes in the Concentrations of Urinary Substance in Normal Adults

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Abstract

To screen out subjects having abnormal values from those having normal values of urinary components in adult and elderly people in the compulsory health survey, there is a need for estimating the normal value and its ranges. In the present experiments, the urinary compounds were determined in the subjects from zero to eighty years old, and the results were classified into ten age intervals. The results obtained were as follows. Non corrected concentration of urinary creatinine increased and attained maximum at age twenty, then decreased as age increased. Non-corrected concentrations of urinary total protein and albumin and specific gravity had a tendency to decrease by age. Non corrected concentration of urinary β 2-microglobulin and activity of NAG increased by age after age forty. In corrected concentration of urinary compounds for specific gravity, decreased tendency was observed in creatinine concentration and increased tendency was in β 2-microglobulin and activity of NAG. In corrected concentration of urinary compounds for creatinine, increased tendency of total protein concentration β 2-microglobulin and increased tendency of activity of NAG were observed. The urinary concentrations of total protein, albumin, β 2-microglobulin and NAG changed by aging. Therefore, there is a need that upper limits of urinary concentrations of these compounds should be

calculated for screening the subjects having abnormal values of the urinary compounds. The grade of change in the concentrations of urinary compounds corrected for specific gravity was less than those corrected for creatinine, and the former is considered to be preferable to the latter for comparison of urinary concentrations of urinary compounds among young, adult and old people.

要約

近年、人口の老齢化と共に40歳以上を対象とする住民の老人検診が重要視され、その項目に含まれている尿検診の頻度が高くなっている。従って、日本人の年齢別尿中物質濃度とその異常を調べ、高血圧、糖尿病などに基づく腎疾患等のスクリーニングのために必要となり、更に、加齢による尿中物質の変動が必要とされるに至っている。この見地から生後より10歳代間隔で、尿を対象として比重及び、クレアチニン、総タンパク、アルブミン、 β 2-ミクログロブリン濃度及び、NAG活性値を測定し、実測値、比重補正值、クレアチニン補正值について解析比較を試みた。その結果、原クレアチニン濃度は、10歳代まで増加し、20歳代をピークに加齢と共に減少する。また、比重、総タンパク、アルブミン濃度は、加齢と共に減少する傾向である。これらと反対に、 β 2-ミクログロブリン濃度とNAG活性値は40歳代から増加する傾向である。これら加齢による尿中物質の変動が存在することから異常値を有する尿をスクリーニングするためには、年齢別の測定値の上限を用いる必要がある。また、比重補正及びクレアチニン補正の長短について検討を行った結果、年齢別に尿中物質を比重補正值であらわすことは実測値と共に有意義である。
