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| • 中文摘要 | 查無中文摘要 |
| • 英文摘要 | The objective of this study was to discuss the distribution of the inorganic arsenic metabolism capabilities and the relationship between selenium levels in urine and urinary arsenic methylation capabilities among the residents in Lanyang Basin who drank underground water and exposed to the high concentrations of inorganic arsenic. 8,102 residents were participated questionnaire interview in 1991. According to the arsenic concentration of their drinking water, They were classified into four groups; from each group, totally 317 persons were equally randomly sampled. Their drinking well water, urine, and blood were collected and stored in refrigerators at the temperature of -20℃ and -70℃ respectively. The concentration of arsenic in well water was determined by hydride generation combined with flame atomic absorption spectrometry. The selenium levels in serum, selenium and arsenic levels in urine were determined by graphite furnace atomic absorption spectrometry. The urinary inorganic arsenic methylation species were determined by high-performance liquid chromatography with hydride generation atomic absorption spectrometry. It turned out the percentage of monomethylarsonic acid (MMA) and the total arsenic levels in male were significantly higher than those in female, but the percentage of dimethylarsinic acid (DMA) in male were significantly lower than those in female. After adjusting the age and gender, the higher the concentration of arsenic in well water and the cumulative arsenic exposure, the higher the total arsenic and the urinary arsenic concentration. The percentage of inorganic arsenic significantly decreased and the DMA percentage significantly increased while the concentration of urinary selenium and serum α-tocopherol increased. It seemed the urinary selenium level would increase the metabolism of methylation of arsenic, this needed further investigation. |