

# **Plasma Folate Level;Urinary Arsenic Methylation Profiles;and Urothelial Carcinoma Susceptibility**

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摘要

## **Abstract**

To elucidate the influence of folate concentration on the association between urinary arsenic profiles and urothelial carcinoma (UC) risks in subjects without evident arsenic exposure, 177 UC cases and 488 controls were recruited between September 2002 and May 2004. Urinary arsenic species including inorganic arsenic, monomethylarsonic acid (MMA(V)) and dimethylarsinic acid (DMA(V)) were determined by employing a high performance liquid chromatography-linked hydride generator and atomic absorption spectrometry procedure. After adjustment for suspected risk factors of UC, the higher indicators of urinary total arsenic levels, percentage of inorganic arsenic, percentage of MMA(V), and primary methylation index were associated with increased risk of UC. On the other hand, the higher plasma folate levels, urinary percentage of DMA(V) and secondary methylation index were associated with decreased risk of UC. A dose-response relationship was shown between plasma folate levels or methylation indices of arsenic species and UC risk in the respective quartile strata. The plasma folate was found to interact with urinary arsenic profiles in affecting the UC risk. The results of this study may identify the susceptible subpopulations and provide insight into the carcinogenic mechanisms of arsenic even at low arsenic exposure.