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• 計畫中文名稱	臺灣烏腳病盛行地區高血壓、糖尿病與心血管疾病之分子流行病學研究		
• 計畫英文名稱	The Molecular Epidemiological Study of Hypertension, diabetes and Cardiovascular Disease in Blackfoot Disease Hyperendemic Area in Taiwan		
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• 中文關鍵字	高血壓；糖尿病；心臟血管疾病；砷；微量營養素；烏腳病流行區		
• 英文關鍵字	Hypertension；Diabetes mellitus；Cardiovascular disease；Arsenic；Micronutrient；Blackfoot disease endemic area		
• 中文摘要	<p>本研究為探討臺灣烏腳病高盛行地區居民高血壓、糖尿病與心血管疾病盛行率與尿液中無機砷甲基化代謝物種比例、血清微量營養元素濃度等因子之間的關係。研究對象乃選擇居住於烏腳病高盛行里，好美、復興、新民三里居民。在 78 年 1 至 2 月進行健康檢查，參加人數共 898 人。經醫師診斷為糖尿病患者 86 人，高血壓者 168 人和 78 名心電圖判讀為缺血性心臟病之居民為病例組，另外選取心電圖正常且無糖尿病、高血壓、心絞痛或疑患心肌梗塞之居民為對照組。從-20°C冰庫中找出符合條件之研究對象的尿液利用高效能液相層析儀連結氫化器及原子吸收光譜儀進行無機砷甲基化代謝物種(三價砷酸、五價砷酸、單甲基砷酸及雙甲基砷酸)分析及定量。此外，同時從-70°C冰庫中找出符合條件之研究對象的血清利用高效能液相層析儀進行血清微量營養元素(α-維生素 E、α-與 β-胡蘿蔔素、蕃茄紅素與維生素 A)濃度測定。本研究發現 α-維生素 E 越高者高血壓危險性顯著偏低。維生素 A 高者糖尿病危險性顯著偏低。調整年齡、性別、抽菸、喝酒、膽固醇與三酸甘油脂之多變項分析結果發現累積砷暴露越高且尿液單甲基砷酸百分比越高者其高血壓危險性顯著偏高，但糖尿病危險性並無顯著關係。</p>		
• 英文摘要	<p>To explore the relationship among serum micronutrients, arsenic methylation capability, and the development of hypertension, diabetes, and cardiovascular disease, 898 residents aged 30 or above were recruited from three arseniasis-hyperendemic villages from January to February 1992. A total of 168 hypertension and 86 diabetes cases were diagnosed by internist, and EKG diagnosed 78 cases as being affected with ischemic heart disease. In addition, age-sex-matched healthy controls were chosen as study subjects. We analyzed arsenic species (arsenate, arsenite, monomethyl-arsenic acid, and dimethyl-arsenic acid) in urine using high performance liquid chromatography (HPLC) on line linked to hydride generator and atomic absorption spectrophotometer (HG-AAS), and we also determined the micronutrients (retinol, α-tocopherol, lycopene, α- and β-carotene) of serum using HPLC. We</p>		

found that the higher α -tocopherol level, the higher risk of hypertension. The higher retinol level, the higher diabetes risk. On the other hand, we found that the higher cumulative arsenic and urinary monoarsonic acid percent, the higher hypertension risk after age, sex, cigarette smoking, alcohol drinking, cholesterol, and triglyceride adjustment. But, the risk of diabetes did not related.