• 系統編號	RB8407-1054
• 計畫中文名稱	皮膚砷癌之分子流行病學研究
• 計畫英文名稱	Molecular Epidemiological Study of Arsenic-Induced Skin Cancer.
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC82-0412-B038-022
• 執行機構	台北醫學院公共衛生學科
• 本期期間	8202 ~ 8301
• 報告頁數	0 頁
• 使用語言	中文
• 研究人員	薛玉梅；許東榮；葉錦瑩；邱弘毅 Hsueh, Yu-Mei；Hsu, Tong-Jung；Yeh, Ching-Yin；Chiou, Hung-Yi
• 中文關鍵字	皮膚砷癌；.beta.-胡蘿蔔素；維生素 A；維生素 E； 分子流行病學
• 英文關鍵字	Arsenical skin cancer；.beta.-carotene；Vitamin A；Vitamin E； Molecular epidemiology
• 中文摘要	爲探討烏腳病盛行地區終止飲用深井水 15-25 年後,皮膚癌發生之多重危險因子。本研究以 78 年 1 月-2 月及 80 年 9 月於嘉義縣布袋鎮好美、復興、新民三里,接受訪視及採血之 30 歲以上的居民爲研究世代。共追蹤 654 位居民,其中包含 275 位男性和 379 位女性。追蹤的人年數爲 2,239 人年。新發生的皮膚癌病例數爲 33 人。本研究以收案時所蒐集的基線資料,進行飲水年數、居住年數和累積砷暴露量及其他危險因子與皮膚癌發生之相關性探討。並以追蹤期間內罹患皮膚癌的新個案 21 人,以及按年齡、性別、個別匹配所選取的健康對照 73 人,進行血清中.beta.-胡蘿蔔素,維生素 A 及維生素 E 的濃度測定之重疊病例對照研究。研究個案之人口學特徵、飲水史、居住史、家族皮膚癌和烏腳病既往史,肝功能指標、教育程度、職業、抽煙、喝酒習慣、工作日曬時數和食用番薯簽既往史,均是以結構式問卷由公共衛生護士訪視獲得。皮膚癌的診斷由高雄醫學院皮膚科醫師協助進行檢查,血清中.beta.-胡蘿蔔素,維生素 A 及維生素 E 的濃度以高效度液相層析法(HPLC)進行測量。 在皮膚癌追蹤研究中,本研究發現皮膚癌的年齡性別調整發生率與慢性砷暴露指標,包括居住在烏腳病地區的年數,飲用烏腳病地區深井水年數,平均砷暴露(ppm)和累積砷暴露(ppm*year)呈顯著的劑量效應關係。在調整其他的危險因子,包括鹽田工作史,食用乾番薯簽年數,慢性 B 型肝癌帶原狀態和肝臟功能之後,皮膚癌的發生率仍與慢性砷暴露指標呈顯著的劑量效應關係。另外,在飲用深井水居民中,隨著停止飲用深井水年數的增加,皮膚癌的發生率顯著的下降。由此個人層次追蹤資料的結果更能加強砷與皮膚癌發生的相關性。 在重疊病例對照研究中,本研究亦發現皮膚癌發生率與飲用烏腳病地區深井水年數和累積砷暴露(ppm*year)呈顯著的劑量效應關係。隨著血清中.beta.-胡蘿蔔素的增加皮膚癌的發生率下降。而隨著血清中維生素 A 及 E 的增加,皮膚癌的發生率上升但並無統計上顯著的相關性。在調整累積砷暴露變項及血清中.beta.-胡蘿蔔素干擾因子,包括血清中膽固醇、三酸甘油酯、抽煙和喝酒等變項後,在連續變項分析中,隨著血清中.beta.-胡蘿蔔素每增加一個單位,皮膚癌的發生率顯著地下降。在分組變項分析中,血清中.beta.-胡蘿蔔素與皮膚癌的發生率呈顯著逆相關且呈現逆向劑量效應關係。由本研究的結果得知皮膚癌的發生與慢性砷暴露指標和血清中.beta.-胡蘿蔔素偏低有顯著的相關性。

- 英文摘要

In order to explore the incidence and multiple risk factors of arsenic-induced skin cancer among residents in hyperendemic villages of chronic arseniasis after stopping drinking artesian well water. A total of 275 men and 379 women aged 30 or more years old were recruited from January 1989 to September 1990. Total follow-up years were 2239 person years and 33 cases were newly skin cancer. All study subjects received health examinations and questionnaire interviews at the recruitment. This study used this base line information to investigate the relation between the incidence of skin cancer and chronic arsenic exposure indexed by years of drinking artesian well water, resident years and cumulative arsenic exposure, and other risk factors. In nested case control study, the serum of new skin cancer 21 cases and age-sex individual matching 73 healthy control were analyzed to measure the concentration of .beta.-carotene, vitamin A and vitamin E. Sociodemography characters, history of drinking artesian well water, history of residence, history of family disease, index of liver function, education, occupation, cigarette smoking, alcohol drinking habit, sunshine exposure hours and duration of consuming dried sweet potato of study subjects were introduced by well trained public health nurses. Skin lesions including hyperpigmentation, hyperkeratosis and cancers were clinically diagnosed by well experienced dermatologists from Kaohsiung Medical College. .beta.-carotene, vitamin A and vitamin E of serum were measured by HPLC. In the follow-up study, we found a dose-response relation between incidence of skin cancer and chronic arsenic exposure indexed by duration of living in the endemic area, duration of consuming high-arsenic artesian well water, average arsenic exposure in parts per millon (ppm), and cumulative arsenic exposure in ppm-years. After other risk factors adjusted the incidence of skin cancer still significantly related with chronic arsenic exposure. Other risk factors include history of salt production, duration of consuming dried sweet potato. On the other hand, There was a significant inverse association between age-sex-adjusted relative risk of skin cancer and duration after cessation of arsenic exposure. In the nested case control study, we also found a dose-response relation between incidence of skin cancer and chronic arsenic exposure. The incidence of skin cancer decreased when .beta.-carotene of the serum increased, but, the incidence of skin cancer increase when vitamin A and vitamin E increase. They are not statistically significant. After cumulative arsenic exposure (ppm-year) and confounder of serum .beta.-carotene included cholesterol, triglyceride, cigarette smoking and alcohol drinking were adjusted, in the continuous variable analysis, the incidence of skin cancer significantly decrease when .beta.-carotene of the serum increase one unit. In the categories analysis, a inverse dose-response relation between incidence of skin cancer and .beta.-carotene of the serum. It is shows significant relation between incidence of skin cancer and chronic arsenic exposure and low concentration of serum .beta.-carotene from this study.