

BRAIN CANCER ASSOCIATED WITH INCREASED MOBILE PHONE USERS: EVIDENCE FROM TAIWAN

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Background and Aims: Recent studies have shown that low-energy electromagnetic waves may affect human cognitive and brain function. However, evidence that mobile phone electromagnetic waves act as a carcinogen is still insufficient. Mobile phone was first introduced into Taiwan in 1989, its usage has reached 88.9% of the nation's population by 2007. Because use of mobile phones is different between cities and counties, the study aimed to investigate the numbers of mobile phone users in cities and counties and the corresponding trend in the brain cancer incidence from 1999 to 2007.

Methods: We used data on a total 22 cities and counties in Taiwan. Age-specific incidence rate (per 100,000 persons) of brain cancer from 1999 to 2007 were obtained from the cancer registry and standardized based on the 2000 WHO world standard population. Person-number and times of mobile phone usage were obtained from the Taiwan Directorate General of Budget, Accounting and Statistics.

Results: We used simple linear regression to compare trends (1999-2007) of standardized incidence rates between Taipei City (largest number of mobile phone users.) and Chiayi County (smallest number of mobile phone users.) ($B=0.41$, $p=0.048$). However, after adjustment for confounders (population density, average population served per physician, annual electricity consumption in the cities and counties, and the number of HIV infections), multiple regression results showed that the incidence of brain cancer and the number of mobile phone users had no significant correlation.

Conclusion: The results of this investigation did not support the hypothesis that the number of mobile phone users in Taiwan cities and counties had different brain cancer incidence.

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