

The impact of time, legislation, and geography on the epidemiology of traumatic brain injury

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摘要

Abstract

In 1991, a population-based epidemiologic traumatic brain injury (TBI) study was done in urban and rural areas of Taiwan; this was 5 years before the helmet use law was passed and 8 years before the drink driving law was passed. In order to evaluate the impact of three major determinants (time, geography, and legislation) on the epidemiology of TBI, we conducted a prospective study in 2001 and used the 1991 data to examine the differences in TBI distribution in urban and rural Taiwan a decade after these laws were passed. In 2001, 5754 TBI cases were collected from the urban area of Taipei City, and 1474 TBI cases were collected from the rural area of Hualien County. The TBI incidence rate in Taipei City in 2001 was estimated to be 218/100,000 population (285/100,000 for males and 152/100,000 for females). When compared to the 1991 data, the incidence rate in 2001 had increased by 20%. The TBI incidence rate in Hualien County in 2001 was estimated to be 417/100,000 population (516/100,000 for males and 306/100,000 for females); this was a 37% increase over the 1991 data. Our study found that the distribution of causes and age distribution had shifted significantly over the 10-year period. In 2001, the age group with the highest incidence was 20-29 years, while in 1991 it had been the over 70 years age group. While traffic-related TBI had decreased, falls and assaults had increased in 2001. We also found that legislation, such as the helmet law, affects TBI distribution by decreasing the traffic-related TBI rate, decreasing the admission severity of TBI, and reducing TBI-related mortality. Finally, geography plays a crucial role in the outcome of TBI; over the 10 year period, Taipei had an increase in moderately severe outcomes, while Hualien had an increase in more severe outcomes. Comparative studies of TBI in urban and

rural areas have shown that time, legislation, and geography are crucial determinants of TBI epidemiology. Although time and legal interventions seem to have more of an impact, geography does affect TBI outcomes.

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