創傷性頸脊髓損傷與機車安全帽使用

The Relation between Helmet Use and Traumatic Cervical Spinal Cord Injury among Motorcycle Riders

中文摘要

目標：以病例對照研究探討創傷性頸脊髓損傷與機車安全帽使用的相關性。方法：(1)利用中華民國頭部及脊髓損傷研究小組登錄的資料及(2)電話訪談脊髓損傷者補充受傷當時重要的相關資料。結果：病歷登錄的 367 位的脊髓損傷者，其中有 236 位是頸脊髓損傷。電話訪談完成有效追蹤問卷 127 份。多變項邏輯迴歸分析顯示 367 位脊髓損傷者中，使用安全帽者較沒有使用安全帽者有 0.54 倍的勝算比產生頸脊髓損傷，但沒有統計上的顯著意義。多變項邏輯迴歸分析 127 位脊髓損傷者，共分爲二個模式，模式Ⅱ中與沒有戴安全帽者比較，全罩式完全繫緊、全罩式沒有繫緊、半頂型完全繫緊及半頂型沒有繫緊會產生頸脊髓損傷的勝算比分別是 0.49、1.74、0.30 及 0.34；模式Ⅲ中與沒有使用安全帽者比較，全罩式完全繫緊、全罩式沒有繫緊、半頂型完全繫緊及半頂型沒有繫緊會產生頸脊髓損傷的勝算比分別是 0.23、1.54、0.11 及 0.17。以上兩個模式都未達統計的顯著意義。結論：安全帽並不會造成頸脊髓損傷。另外，安全帽沒有繫緊比沒使用安全帽勝算比高的原因有下列兩點：(1)全罩式安全帽沒有繫緊時，當受到衝擊會使頭頸部旋轉角度過大而造成頸脊髓的損傷；(2)沒有完全控制衝擊力造成的嚴重度，而產生殘餘干擾。

關鍵詞：頸脊髓損傷、機車安全帽、機車事故。

英文摘要

Objectives：A case-control study was conducted to determine the relation of cervical spinal cord injury and motorcycle helmet use. Methods：We use (1)spinal cord injury (SCI) registry data from Head Injury and Spinal Cord Injury Group and (2)telephone interview to derive the important factors in motorcycle accident. Results：127 of all 367 SCI cases successfully completed the detail description of injury by telephone interview. Several results were obtained by our analysis of logistic regression model. Among all 367 SCI cases, helmet users were 0.54 times to be more likely associated with cervical SCI compared with none helmet users. In the ModelⅡ, the odds ratio of cervical injury of full-coverage with complete tightness of helmet buckling, full-coverage with incomplete tightness, partial-coverage with complete tightness and partial-coverage with incomplete tightness to none helmet users were 0.49, 1.74, 0.30 and 0.34, respectively. In the ModeⅢ, the odds ratio of cervical injury of full-coverage with complete tightness of helmet buckling, full-coverage with incomplete tightness, partial-coverage with complete tightness and partial-coverage

with incomplete tightness to none helmet users were 0.23, 1.54, 0.11 and 0.17, respectively. However, none of these results had reached statistical significance.
Conclusion：Motorcycle helmet use did not increase the incidence of cervical spinal cord injury. There are 2 possible reasons that make the odds ratio of incomplete tightness of helmet buckling users higher than none helmet users. First, full-coverage with incomplete tightness may cause cervical spinal cord injury due to big rotation angle of head and neck when impact. Second, degree of impact power may also cause residual confounding effect.