

Risk of Vertebrobasilar Stroke and Chiropractic Care Results of a Population-Based, Case-Control and Case-Crossover Study

Abstracted from Spine
January 2008

J. David Cassidy, DC, PhD, DrMedSc; Eleanor Boyle, PhD; Pierre Côté, DC, PhD, Helen He, MD, PhD; Sheilah Hogg-Johnson, PhD; Frank L. Silver, MD, FRCPC; Susan J. Bondy, PhD

Study Design: Population-based, case-control and case-crossover study.

Objective: To investigate associations between chiropractic visits and vertebrobasilar artery (VBA) stroke and to compare this with visits to primary care physicians (PCP) and the occurrence of VBA stroke.

Summary of Background Data: VBA stroke is a rare occurrence. Neck pain and headache are common symptoms of VBA dissection and typically precede VBA stroke. Chiropractic care is popular for neck pain and headache, but has been associated with an increased risk for VBA dissection and stroke. People experiencing headache and neck pain may also choose to consult a primary care physician.

Methodology: The cases studied comprise eligible incidents of VBA stroke admitted to Ontario hospitals over a nine year period from April 1993 to March 2002. Four controls were age and gender matched to each case. Visits to chiropractors and primary care physicians during the year before the stroke date were determined from Ontario Health Insurance Plan (OHIP) billing records. In the case cross-over analysis, cases acted as their own controls.

Results: Over the nine year study period, there were 818 cases of VBA stroke admitted to Ontario hospitals in a population of more than 100 million person-years. Among those under 45 years of age, cases were about three times more likely to visit a primary care physician or a chiropractor prior to their stroke compared to controls. A strong association was found between primary care physician visits and VBA strokes in all age groups. There was no increased association between chiropractic visits and VBA stroke in those older than 45 years.

Conclusions: VBA stroke is a very rare event in the population. The risk of VBA stroke associated with a visit to a chiropractor's office appears to be no different from the risk of VBA stroke following a visit to an MD's office. The incidence of VBA stroke associated with chiropractic and primary care physician visits is likely due to patients with headache and neck pain from VBA dissection seeking care before their stroke. The study found no evidence of excess risk of VBA stroke associated with chiropractic care compared to primary physician care.