

# Transcranial Doppler as a Predictor of Ischemic Events in Carotid Artery Dissection.

Alejandro M. Brunser, Pablo M. Lavados, Arnold Hoppe, Paula Muñoz-Venturelli, Emi Sujima, Javiera Lopez, Eloy Mansilla, Daniel Carcamo, Violeta Diaz

## Abstract

**BACKGROUND:** We aim to evaluate clinical features and transcranial Doppler (TCD) elements, as predictors of the development of ischemic events (IEs) in patients suffering from spontaneous carotid arterial dissection without stroke (CCADW).

**METHODS:** Consecutive patients with CCADW, seen in Clínica Alemana de Santiago between April 2004 and January 2015, were evaluated clinically, and with TCD, microembolic signals (MES) monitoring and breath hold Index (BHI) test were performed.

**RESULTS:** Forty-one patients with 45 CCADW were included. Mean age 41.9 years, 31 male, and 12 (29.1%) patients present with multiple CCADW. At the moment of TCD evaluation, 17 (41.4%) patients were being treated with antiplatelets and the rest under Heparin. TCD monitoring lasted in average 53.3 minutes and demonstrated at the moment of evaluation, MES in four carotid arteries (11.1%) of 3 patients and 13 (28.8%) abnormal BHI in 11 patients. Six IEs occurred in 3 patients, 3 strokes, and 3 transient ischemic attacks. In the univariate analysis correlating IE with clinical and ultrasonographic findings, the degree of carotid stenosis, the presence of multiple CAD, and the presence of MES plus abnormalities of BHI were significantly associated with the risk of an IE. Multivariable analysis showed that only the presence of MES plus abnormal BHI were significant ( $P < .001$ ). MES and abnormal BHI were present in the 3 patients and in four arterial territories that had IE.

**CONCLUSIONS:** TCD can identify a subgroup of patients with CCADW who are at high risk of IE.