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Cross-Country Comparison of Medication Adherence After Stroke Using Standardised Methods: A Pilot Distributed Network Analysis for INSPIRE-STROKE

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Background

Post-stroke medication adherence can be assessed using dispensing data; however, variations in methods hinder reliable comparisons across regions. We developed and implemented standardised methods to compare post-stroke medication adherence between countries.

Methods

Australia and Canada, with population-based data and universal healthcare systems, were selected for this INSPIRE-STROKE proof-of-concept distributed network analysis (www.inspire-stroke.bigdatacvi.com). Metadata were shared to harmonise data variables and structure. Patients admitted with incident ischaemic stroke and atrial fibrillation (Victoria, Australia [July 2014–June 2017]; Ontario, Canada; [July 2014–March 2022]), aged 66–105 years, who survived ≥ 90 days post-discharge were included. The proportion of days covered (PDC) of direct oral anticoagulants (DOACs) was measured from initiation to 1-year post-discharge. Adherence was measured in 8 simulations, using standardised code, to adjust for different PDC measurement parameters from the TEN-SPIDERS framework (www.tenspiders.adherencelab.com). Aggregated outputs were compared between countries.

Results

Among 2471 Australians (50% female; 36% aged 85+ years) and 16622 Canadians (51% female; 34% aged 85+ years), 50% and 65% initiated a DOAC within 90 days post-stroke, respectively. Among initiators, median 1-year DOAC PDC was 86.8% (interquartile range [IQR]: 75.9%–92.6%) in Australia vs 96.2% (IQR: 89.6%–98.6%) in Canada. Adjustment for pre-supply, early refills, and switching increased median PDC by +10.3% in Australia and +3.5% in Canada. Further adjustment for in-hospital stays had negligible impacts on PDC in both countries.

Conclusions

Standardised methods were successfully implemented to facilitate cross-country comparisons of post-stroke medication adherence. Use of standardised methods in other countries will enable reliable global surveillance of post-stroke medication adherence.

