

## **Brief Report**

### **Scientific Collaboration Networks in Argentine Cardiology Publications**

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#### **Background**

The structure of scientific collaboration networks has been recently studied in different disciplines. The analysis of large data bases using specialized software capable of connecting the different authors and coauthors in a large network of scientific collaboration has enabled the construction of collaboration graphs between investigators in several disciplines. The use of these networks is not new in the field of bibliometrics; however, attention has been recently focused on academic co-authorship networks which might be more representative of the structure of knowledge of an academic community.

#### **Objective**

To describe the structure of scientific collaboration networks in Argentina based on co-authorship network analysis of the articles published in the field of cardiology during 2007.

#### **Material and Methods**

We conducted a bibliographic search of Argentine papers published in the field of cardiology. Data was retrieved from Medline and from two local journals: Rev Argent Cardiol and Rev Fed Arg Cardiol. Collaboration networks between authors were constructed using the Kamada-Kawai algorithm included in the Pajek software.

#### **Results**

Mean papers per author ranged from 1.12 to 1.24, the exponent tau of productivity was 2.78 to 3.45, mean authors per paper from 3.60 to 6.51, and collaborators per author ranged between 2.60 and 4.88. The construction of collaboration networks showed that the size of the giant component was between 13.1% and 65.8%, the mean distance between authors was 1.5 to 8.5 and the maximum distance was 5-24.

#### **Conclusions**

The structures of different scientific collaboration networks based on co-authorship in Argentine papers published in local and international journals were studied. The productivity index followed Lotka's law with a value that was similar to the one reported in biomedical publications. The size of the collaboration network was smaller than expected, probably due to the short period of the study. The mean distance between authors was greater than we expected, indicating an inadequate structure of connections and collaboration between investigators.

REV ARGENT CARDIOL 2009;77:487-492