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Title of the abstract *(bold)*	**Web system for medical history management and advanced data analysis**

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TEXT:

Introduction: Computerized tools for data acquisition and management are widely used in health care services around the world. Patient details, laboratory test results or different image modalities are continually stored and retrieved for making a diagnosis. Advances in computer science can be part of these tools in order to improve the diagnosis process, by embedding signal and image processing techniques to extract information in a fast and objective manner, or by including data mining techniques and statistical analyses to extract relevant information from the huge amounts of data acquired from different sources.
Methods: We present a web application that provides an user-friendly medical history management system as well as several tools for automatic data analysis focused on vascular research. The system includes a semi-automatic procedure for the Intima-Media Thickness (IMT) measurement from B-mode ultrasonographies of the common carotid artery. In addition, an automatic algorithm for the Arterio-Venous Ratio (AVR) computation from retinographies is included. The system is also able to analyze holter recordings and perform signal analysis. The information extracted is stored in the patient's medical records in a centralized database server.
The web application is accessed by authorized users over a network, such as Internet or the Hospital's intranet. Users only require a web browser to interact with the tools so no extra software is needed.
Results: The proposed system is being used for research purposes in several units of Hospitals from Portugal and Spain. We had acquired clinical data from several patients and automatically measured IMT and AVR.
Discussion: We propose a framework for computer-aided diagnosis focused on vascular research that integrates several tools for signal and image processing. The application is easily accessible and efficient, reducing the time requirements and efforts of the clinician, enabling collaborative work, and simplifying screening procedures as well as research activities.