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A case-based reasoning view of thrombophilia risk



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ABSTRACT

Thrombophilia stands for a genetic or an acquired tendency to hypercoagulable states that increase the risk of venous and arterial thromboses. Indeed, venous thromboembolism is often a chronic illness, mainly in deep venous thrombosis and pulmonary embolism, requiring lifelong prevention strategies. Therefore, it is crucial to identify the cause of the disease, the most appropriate treatment, the length of treatment or prevent a thrombotic recurrence. Thus, this work will focus on the development of a diagnosis decision support system in terms of a formal agenda built on a logic programming approach to knowledge representation and reasoning, complemented with a case-based approach to computing. The proposed model has been quite accurate in the assessment of thrombophilia predisposition risk, since the overall accuracy is higher than 90% and sensitivity ranging in the interval [86.5%, 88.1%]. The main strength of the proposed solution is the ability to deal explicitly with incomplete, unknown, or even self-contradictory information.

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