

Evidence-based medicine in thrombosis and hemostasis: ISTH to the fore

The Michael G. DeGroot School of Medicine in Hamilton, Ontario, Canada (formerly McMaster University School of Medicine) was founded in 1965. Since its inception, the school has been a center for innovation of medical education and biomedical discovery. The educational method of problem-based learning was started at McMaster, and the school was the first to introduce a three-year MD undergraduate program. Of relevance to this editorial, McMaster also has a longstanding international reputation for excellence in clinical epidemiology and thrombosis.

In the early 1980s, David Sackett, founder of the first Canadian clinical epidemiology department at McMaster, published a series of articles in the *Canadian Medical Association Journal*,¹ describing the foundation of what we now know as evidence-based medicine, and thus a new era of clinical care was born.

In retrospect, it seems almost surreal that the practice of medicine up until 40 years ago was based primarily on anecdotal expert opinion gathered from non-scientific assessment of the clinical literature. Nevertheless, over the past couple of decades, the momentum of evidence-based clinical practice has been inexorable, and the application of formal clinical guidelines is now expected in all areas of medicine.

The process of clinical guidelines generation has its own strict scientific protocols. The systematic review of literature and subsequent assignment of levels of evidence is stringently applied and evaluated by teams of clinical scientists who have been carefully screened to ensure no influence of conflicts of interest.

However, even with this comprehensive and detailed characterization of the literature, many clinical scenarios remain sadly lacking in robust objective evidence on which to base recommendations. In these instances, the strength of guidelines recommendations will be correspondingly weak, or it may be concluded that there is insufficient medium or high-quality evidence to develop a guidelines document and instead, the outcome of the analysis is a clinical guidance recommendation.

The ISTH formed a Guidance and Guidelines Standing Committee in 2014 that has been developing guidance documents for several years. In addition, the Society's Scientific and Standardization Committee regularly publishes recommendations relating to standardization issues for laboratory and clinical practice. The development of formal clinical guidelines requires a major commitment of human and financial resources, and ISTH has been correspondingly cautious in entering this arena of clinical science. Nevertheless, in the past few months, the Society has published its first two formal

clinical guidelines documents, on the diagnosis and treatment of von Willebrand disease (VWD)^{2,3} and thrombotic thrombocytopenic purpura (TTP).^{4,5}

The diagnosis and treatment of VWD is complex, and although this disease is probably the most common inherited bleeding disorder, high-quality evidence for therapeutic interventions is not abundant. This guideline process also marked another first, in that the initiative was supported by four independent hematology/hemostasis organizations: the American Society of Hematology, ISTH, the World Federation of Hemophilia and the US National Hemophilia Foundation. This coordinated effort has resulted in an internationally applicable set of diagnostic and treatment guidelines that will greatly assist in the clinical management of this condition in the future.

The TTP guidelines have been generated solely by ISTH and were published in *JTH* in its October 2020 issue. This rare thrombotic microangiopathic disorder has long raised the interest of hemostasis scientists and clinicians alike, but formal guidelines for diagnosis and intervention have been lacking until now. The ISTH guidelines promise to introduce a much-needed evidence-based approach to the management of this often life-threatening thrombotic disease.

As a member of the hemostasis community, you can influence the guidelines initiatives within our discipline. If you have suggestions for future guidance, guidelines or SSC recommendation projects, contact colleagues who you know to be engaged in these areas of interest with your proposals. Collectively, these efforts will ensure the advancement of improved clinical care of patients with thrombotic and bleeding diseases.

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