Conflict of Interest
None.

References

China’s Contribution to the Publications in the Journal of Cardiothoracic and Vascular Anesthesia: A Ten-year Survey

To the Editor

Chinese scientific productivity in cardiothoracic and vascular anesthesia has not been analyzed for a decade. The Journal of Cardiothoracic and Vascular Anesthesia (JCVA) has been an official journal of the Cardiovascular and Thoracic Anesthesia Subspecialty Group of the Chinese Society of Anesthesiology since 2010. We conducted a bibliometric analysis of thesesia Subspecialty Group of the Chinese Society of Anesthesiology in October 2020.1 We conducted a bibliometric analysis of the official journal of the Cardiovascular and Thoracic Anesthesia Subspecialty Group of the Chinese Society of Anesthesiology has not been analyzed for a decade. The To the Editor

A total number of 4,258 articles were published in JCVA from 2011 to 2020. China ranked fourth by contributing 186 (4.37%) papers, behind the United States (2,038; 47.86%), Canada (254; 5.97%), and Italy (213; 5.00%), but ahead of Japan (150; 3.52%) and the United Kingdom (148; 3.48%). Although there was still a remarkable gap in the number of publications between China and the United States, it appeared that the difference in the annual number of published papers between China and other developed countries was small. The number of citations of an article reflects its impact on a specific biomedical field and its recognition in the scientific community.2 China’s total citation count in JCVA was 1,723, less than the USA (10,822), Italy (2,258), and Canada (1,826). However, China ranked second (9.26) in citations per article, just behind Italy (10.60) but ahead of the UK (7.66), Canada (7.19), the United States (5.31), and Japan (4.42). These citation figures suggest that articles from China appearing in JCVA had widespread interest.

Whereas the annual number of articles from China in JCVA increased during the last decade, the increase was not as obvious in terms of the percentage of publications (Table 1). In contrast with our finding, during the decade from 2000 to 2009, China only contributed 0.7% (12/1,816) of publications to JCVA, which ranked 20th among all countries.3 This may be attributed to the affiliation of the Journal with the Chinese Society of Anesthesiology in 2010. Interestingly, in Pagel’s study, a similar growth has been noted in the percentage of research publications from Europe in JCVA after its new partnership with the Journal.4 Another possible underlying but more important reason for the surge of publications from China is the country’s advancement in research productivity in all biomedical sciences. In recent years, China steadily has increased investment in research and development, which encourages more investigators to participate in scientific research and helps to enhance research output.

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Conflict of Interest
None.
Reply To: Same Same but Different: Viscoelastic Hemostatic Assays in Cardiac Surgery

WE READ with interest the editorial by Bolliger et al. accompanying our publication comparing two different viscoelastic hemostatic assays. 1,2 We applaud the authors’ efforts in detailing viscoelastic hemostatic assays and their use in perioperative monitoring of hemostasis. However, we would like to provide some clarification regarding the differences in testing methodologies used by various viscoelastic testing platforms.

The authors incorrectly stated that the Quantra and TEG 6S use the same ultrasound technology. Although the TEG 6S uses sound (20-500 Hz), it does not use ultrasound to generate a visible wave pattern on the blood meniscus that is then photo optically read. As reported in a recent study by Pham et al., within each of the TEG 6S instruments microfluidic channels, a blood meniscus forms, which partially blocks the transmittance of light to a photodiode.3 This channel subsequently is exposed to sound frequencies ranging from 20-to-500 Hz. An optical detector then senses the motion of the blood meniscus, and the clot’s resonant frequency is identified by Fourier transformation as the frequency associated with the highest meniscal displacement.

Conversely, the cup and pin technologies used by the TEG 5000 and ROTEM devices are descendants of Hartert’s initial implementation of thromboelastography from the 1940s.4 Hartert’s setup, recently described by Hochleitner et al., employees a mirror to reflect a light source into a photographic film graded in units of millimeters.5 The output tracing represents the evolution of clot amplitude versus time and the effects of both the elastic and viscous components of the forming clot, and is nonlinearly related to the actual shear modulus of elasticity. Consequently, both the TEG and ROTEM devices represent indirect measurements of a clot’s viscoelastic properties and shear modulus.

The measurement of resonance provides a direct quantitative assessment and the ability to directly report a clot’s absolute viscoelastic properties. The sonic estimation of elasticity via resonance (SEER) sonorheometry technology implemented in the Quantra enables the analysis of the resonance signal and separates the elastic versus the viscous component of the viscoelastic response. Derivation of output parameters and the trace generated by the Quantra device depict only the elastic component (ie, the shear modulus of elasticity). The ability to directly measure shear modulus allows the Quantra to accurately compute the platelet contribution to clot stiffness, which the authors correctly mention in their editorial.

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