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Book Reviews



New insights in intracerebral hemorrhage, K. Toyoda, C.S. Anderson, S.A. Mayer, editors (Karger, Basel, Switzerland) 2016. 198 pages. Price: US\$ 155.00/CHF 132.00/ EUR 123.00

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This volume on intracerebral haemorrhage has 14 chapters, and is a part of the ongoing series, 'Frontiers of Neurology and Neuroscience'.

The first chapter reports the epidemiology of intracerebral haemorrhage (ICH). ICH has an overall incidence of 24.6 per 100,000 person years and is associated with high fatality. The authors have searched Ovid MEDLINE for 24 years for systematic reviews and concluded that the incidence has not changed in the last 30 years. A regional variation with higher incidence in Asians with hypertension has also been reported. Overall emerging modifiable risk factors are alcohol consumption, body mass index, diabetes and diet.

In the second chapter on emergency imaging of ICH, the authors stress that imaging is important to rapidly diagnose the haematoma and the underlying complication and aetiology. An evidence based imaging framework is presented by the authors. Non-invasive angiography *i.e.*, CT angiography is able to predict reliably the likelihood of haematoma progression, particularly the presence of small enhancing foci within the haematoma.

In the third chapter, 'Evidence-Based Critical Care of Intracerebral Haemorrhage: An Overview', the authors opine that the outcome of the ICH is still poor, especially in the intensive care settings and efforts should be made to control systolic blood pressure to less than 140 mmHg and maintain ICP (intracranial pressure) at less than 20 mmHg. Haemostatic agents are not indicated in case of patients not receiving any anticoagulants. Furthermore, surgery has to be individualized and patients with better level of consciousness (GCS 9-12) might benefit from surgery within the first eight hours.

In the fourth chapter, 'New Insights into Blood Pressure Control for Intracerebral Haemorrhage', elevated blood pressure has been reported to be associated with poor outcome, although the exact pathophysiological mechanism is not known.

Chapter 5, 'Emergency Reversal Strategies for Anticoagulation and Platelet Disorders' discusses the old established techniques and agents, as well as the new agents. Reference is also made to clinical situation where the anticoagulation has been put in place for a coronary stent. Furthermore, platelet concentrates and DDAVP have been shown to be both safe and effective for the rapid reversal of the antiplatelet drugs.

In the sixth chapter, 'Reperfusion-Related Intracerebral Haemorrhage', the feared complication of intravenous thrombolysis has been discussed. Scoring systems for predicting ICH after intravenous thrombolysis are discussed at length. Management of the haematoma once it has occurred, is also discussed.

The next chapter on cerebral microbleeds, their detection, associations and clinical implications discusses the relevance of these microbleeds, associating them with cognitive decline. MRI findings in various sequences and their significance thereof are also discussed.

In the next chapter on new insights into nonvitamin K antagonist oral anticoagulants and their reversal during ICH, the authors state that the reversal methods are not yet well established. General measures to prevent absorption of the drugs, administration of 4-factor prothrombin complex concentrate (4F-PCC) and recombinant activated factor VII are reviewed.

Chapter 9 on ultra-early haemostasis for ICH not associated with any coagulopathy may include administration of tranexamic acid and recombinant factor VIIa and control of systolic blood pressure and ICP.

Extension of intracerebral haematoma into the ventricle independently contributes to morbidity and mortality, which is discussed in chapter 10. The 30 day mortality has been predicted using an IVH (intraventricular haemorrhage) scoring system. Among these ICH volume of >60 ml, severe hydrocephalus, GCS (Glasgow Coma Score) <8 and age above 70 yr are important variables, while EVD (external ventricular drain) may provide some useful decrease in ICP, endoscopic evacuation of haematoma from ventricle with or without thrombolytic therapy requires further evaluation.

In the chapter on surgical craniotomy for ICH, craniotomy and evacuation of clot is suggested surgery for GCS \leq 13; meta-analysis ahead of completion of ongoing trials (CLEAR III, MISLIE III) may give more answers. The other methods of removing clot are by stereotactic and endoscopic aspiration.

The chapter on surgical strategies for acutely ruptured arteriovenous malformations (AVMS) is comprehensive, except related to small superficial AVMS. It is better to wait for four weeks after the rupture, for excising an AVMS.

In the final chapter on prognosis and outcome of ICH, the authors state that mortality at one month is 40 per cent. Data regarding long term outcome is however, scarce and not precise. Further studies are suggested for future research.

Overall this is a well written and edited book. It is informative and will be useful for medical postgraduates as well as clinicians and surgeons in the requisite field.

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