group. We have yet to define these aspects of the treatment in detail.

Potential adverse consequences

There are a number of potential adverse consequences very well documented from its use in other clinical scenarios centring on metabolic acidosis, hypokalaemia and hypocabnia [9, 10]. Our patients are administered this drug in an intensive care setting with at least hourly assessments of haemodynamic and respiratory function, including arterial blood gas analysis. Some patients are ventilated and some are on haemofiltration. Needless to say these consequences are easily corrected when encountered. A theoretical consequence of this drug is that lowering ICP excessively causes tearing of vessels in the subarachnoid space. Our experience is that the drug does not have such a dramatic effect and at best lowers ICP into a physiological range.

Future work

The work to date has focused on using this drug as a treatment when certain conditions are encountered. The drug may also be given orally and there is a potential application of this drug pre-operatively given prophylactically. At present, we are engaged in setting up a randomized controlled trial to test for efficacy as a prophylactic agent.

CONCLUSION

This is the first report of the use of acetazolamide to reduce production of CSF in thoracoabdominal surgery. Our initial observations are that the drug is efficacious in certain patients only. We have yet to determine the pharmacokinetics and pharmacodynamics in this setting.

Conflict of interest: none declared.

REFERENCES


eComment. Spinal cord protection during thoracoabdominal aneurysm repair

Authors: Dimitrios V. Avgerinos, Illias Paniaras, Konstantinos Charitakis and Iakovos Panteliadis

Atheni Heart Institute, Athens, Greece
doi: 10.1093/icvts/ivt507
© The Author 2013. Published by Oxford University Press on behalf of the European Association for Cardio-Thoracic Surgery. All rights reserved.

The study ‘Novel application of acetazolamide to reduce cerebrospinal fluid production in patients undergoing thoracoabdominal aortic surgery’ by Jafarzadeh and associates [1] comes to cover a large practice gap in the prophylaxis of spinal cord ischaemia in patients undergoing thoracoabdominal aortic aneurysm (TAAA) repair.

Our practice so far is to protect the spinal cord during TAAA repair with a spinal drain that is kept for 48–72 h in the postoperative period. Strict guidelines are applied for the management of the drain for optimal protection. In addition, permissive hypothermia and liberal use of alpha-agonists in order to increase the mean arterial pressure during the postoperative period is the standard routine. Finally, recent studies have stressed that adding intrathecal papaverine to the neuromodulatory protocol for descending thoracic aneurysm and TAAA repairs may enhance spinal cord perfusion and provide additional spinal cord protection [2].

We agree with the authors that in cases of contra-indication to the use of a spinal drain or the inability to insert it, the use of other agents that increase spinal cord perfusion is promising. There is an imperative need of a randomized trial, which will determine the efficacy of acetazolamide in the spinal cord protection during TAAA repair.

References


eReply. Spinal cord protection during thoracoabdominal aneurysm repair

Author: Mark L Field

Liverpool Heart and Chest Hospital, Liverpool, UK
doi: 10.1093/icvts/ivt517
© The Author 2013. Published by Oxford University Press on behalf of the European Association for Cardio-Thoracic Surgery. All rights reserved.

We thank Avgerinos et al. [1] for taking the time to read and comment on our paper [2]. We agree entirely that the use of acetazolamide in the setting of thoracoabdominal aortic surgery, as a prophylactic and treatment agent, needs further definition. We are currently awaiting ethical approval for a randomized controlled trial to better define the indications for this drug as well as the pharmacodynamics.

References