CORRESPONDENCE

Cognitive Reserve and the Risk of Postoperative Cognitive Dysfunction

A Systematic Review and Meta-Analysis

by Insa Feinkohl, Georg Winterer, Claudia D. Spies, and Tobias Pischon in issue 7/2017

Delirium as a Risk Factor for POCD

This article successfully combines the known results to date about the genesis of postoperative cognitive dysfunction (POCD) with the concept of cognitive reserve (1). In their work, the authors show that patients with higher level of education have lower risk of developing POCD, and they suggest that this should be included in risk assessment for surgical patients. We are particularly grateful that the review also addresses the link between POCD and the preoperative presence of somatic diseases, which are likewise possible causes of a postoperative delirium (POD). We believe this is of particular importance as treatment of such preoperative risk factors increases the possibility of preventing POCD. Indeed, the current literature indicates that postoperative delirium is also a risk factor for the occurrence of POCD within the first postoperative week (2). We would therefore like to point out that, in addition to the risk factors of cognitive reserve, level of education, and somatic diseases (such as vascular, cerebral, and cardiac diseases), postoperative delirium should also be considered as a risk factor for POCD (3). The use of a trained nursing staff as delirium carers could be a helpful step towards its prevention (4). Thus, the preoperative risk assessment for POCD should increasingly focus on delirium prevention.

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Conflict of interest statement

Prof. Kratz has received speaking fees from Janssen-Cilag and Lilly.
Prof. Diefenbacher declares that no conflict of interest exists.

In Reply:

We thank Professor Kratz and Professor Diefenbacher for their important commentary on postoperative delirium (POD) as another form of cognitive impairment after surgery. Though our work focused on low cognitive reserve as a risk factor that develops in young adulthood (and thus usually decades before surgery), POD is indeed a central postoperative risk factor for subsequent postoperative cognitive dysfunction (POCD). Thus, POD and POCD seem to be closely related not only to one another but also to both preoperative clinical (1) and cognitive risk factors. We would like to point out that cognitive impairment prior to surgery is associated with low cognitive reserve and is a known risk factor for the development of POCD (2) and POD (1). Interestingly, it seems that cognitive reserve may play an exceptional role as a risk factor: our study showed that a low level of education increases the risk of POCD, whereas it does not appear to be associated with POD (1) (although some isolated evidence in this direction has been reported for indicators of cognitive reserve other than education [3]). Therefore, while POD increases the risk of POCD, it appears that the two conditions may have distinct underlying mechanisms. In order to determine possible causal connections, the interplay between cognitive reserve, which develops early in life, and risk of late-life disease including POD and POCD should now be assessed in detail. Until that goal is accomplished to pave the way for therapeutic breakthroughs, we agree with the authors that—in view to prevent POCD—clinical practice should aim to provide the best possible care to patients with delirium.

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