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eComment. The impact of blood conservation on outcomes in adult cardiac surgery

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We read with great interest the study by Vandewiele and associates [1]. Many studies have shown the benefits of retrograde autologous priming (RAP) on preserving the patient's haematocrit to levels that do not require transfusion. Only a study by Murphy *et al.* failed to reproduce similar results in a large cohort of 545 patients [2].

Since our publication in 1998 on retrograde autologous priming [3], we have developed further strategies for blood conservation that have resulted in improved outcomes. Our strategy is three-fold: retrograde autologous priming, low prime volume in the cardiopulmonary bypass (CPB) circuit, and autologous blood donation immediately in the operating room immediately after incision is made. Our preliminary data in the first 300 patients showed a dramatic reduction in the post-operative blood transfusion requirement, with 70% of our patients requiring no blood transfusion at all. In the same time period, our 30-day mortality for all open heart procedures had decreased in an all-time low of 1.38%, and the respiratory complications had dropped from 7% in 2007, to 3% in the end of 2012. This proves that the above three techniques of blood conservation are safe and desirable, leading to reduced morbidity and hospital cost.

Conflict of interest: none declared.

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eComment. Is retrograde autologous priming effective on cerebral functions and haematocrit levels?

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Vandewiele *et al.* presented an interesting paper on retrograde autologous priming (RAP), comprising a satisfactory number of patients [1]. RAP has been employed since the 1960s. The effects and applicability of RAP on haematocrit levels and transfusion requirements are well documented, but still it is not a routine method of cardiopulmonary bypass (CPB) priming due to controversies. This report objectively answers the questions concerning the efficacy of this procedure.

In this valuable report, we think that there are a few topics to be discussed. First, there is no data on whether the same surgeon or different surgeons operated on the patient. This issue is important since it directly affects perioperative blood loss and transfusion strategies.

The second topic addresses the effects of RAP on neurological complications. It is well-known that one of the major effects of maintaining adequate haematocrit levels during CPB is providing better neurological and neurocognitive functions following an operation [2]. However, the authors did not provide information on neurologic complications, such as stroke and delirium.

Finally, in the study, the authors stated that they used phosphorylcholine-coated CPB circuits, which has been documented to have protective effects on blood loss and haematocrit levels [3,4]. It is reported that haematocrit levels did not statistically differ between the groups on admission to intensive care unit, but the possible effects of phosphorylcholine coated circuits on outcomes should also be mentioned.

In conclusion, we also believe that RAP is a very effective and accurate method for maintaining adequate haematocrit levels and lowering transfusion requirements. We, the readers thank the authors for sharing their knowledge and experiences.

Conflict of interest: none declared.

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eReply. Is retrograde autologous priming effective on cerebral functions and haematocrit levels?

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We were pleased to receive Dr Gurbuz and colleagues' comments on our study [1]. Yet, we would like to add some comments to their remarks.