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## Comments on the article “Intraoperative fluid management: Past and future, where is the evidence?”

The article by Al-Ghamdi *et al.* made interesting reading.<sup>[1]</sup> We would like to highlight the following dynamic parameters that have been used to guide goal-directed fluid therapy (GDFT) in

addition to the valuable information provided by the authors:  
1 When using esophageal Doppler for GDFT, corrected flow time has been used as a parameter alongside

stroke volume variation to guide intraoperative fluid by many authors.<sup>[2-4]</sup> It indicates preload and a value of 330–360 ms is usually considered as normal

- 2 Transesophageal echo has been used to guide GDFT. Of the various parameters used are velocity time integral (VTI) variation, superior vena cava variation, inferior vena cava size, variation and left ventricle size, etc. A VTI variation of more than 12% implies fluid responsiveness
- 3 Oxygen extraction has also been used to guide intraoperative fluid therapy and has been found to reduce hospital stay and morbidity<sup>[5]</sup>
- 4 Even central venous O<sub>2</sub> saturation and venous-to-arterial CO<sub>2</sub> difference as complementary tools for GDFT intraoperatively.<sup>[6]</sup>

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There are no conflicts of interest.

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