

**Peer Review File**

**Article information:** <https://dx.doi.org/aob-21-32>

**Reviewer A**

This review summarizes some critical concerns of ECMO. Besides, the evidence is cutting-edge and comprehensive. The article is well organized with the authors' critical appraisal. Therefore, in general, it is a valuable article for peers, especially under the COVID-19 era. Below are some minor suggestions for further refinement.

**Comment 1.** Identify the article as a review in the title.

- *The title was changed as follows, according to the Reviewer suggestion.*

*“Transfusion of blood products during Extracorporeal Membrane Oxygenation: a narrative review of rationale, indications, impact on immune function and outcome.*

**Comment 2.** Specify the process for identifying the literature. e.g. years considered, databases have searched.

- *This is now clarified in the revised manuscript (see Methods section).*

**Comment 3.** In the part of the adverse event, add another paragraph to discuss ways to prevent/handle the adverse events.

- *As per Reviewer suggestion, a dedicated paragraph (“Prevention and management of adverse events”) was added to the revised manuscript.*

**Comment 4.** It is suggested that authors try some visualized way (figure or table) to highlight the key findings, especially the rationale and indication section.

- *The manuscript now includes a table summarizing the key findings of our work.*

**Comment 5.** Regarding the section on impact on immune function, it is obviously vital. However, it does not fit so well with the whole manuscript due to the topic and the less satisfactory depth of discussion. So please consider move this part or dig further. For

example, use wider phrasing of the last two parts as 'noninfectious transfusion-associated adverse events and ways to prevent/handle' and 'benefits that ECMO could bring'. In this way, it covers immune function and benefits under different transfusions-RBC, plasma, coagulation factors.

*- The section on immune function has been revised and widened according to the Reviewer suggestion. Unfortunately the literature offers very few information about the impact of blood products transfusion during ECMO on immune function, however we tried our best to discuss the topic requested by the Editor.*

## **Reviewer B**

Thank you authors for the efforts for such an informative review. Significant works need to be done for the revised manuscript and following are some of the suggestions:

### **Comment 1. Grammar & sentence structure**

i.) There were numerous minor error in grammatical syntax, such as 'the' and 'a' missing from the text.

(Line 169-172) During ECMO support or cardiopulmonary bypass(,) an accelerated antithrombin consumption ..... For this reason, AT supplementation is (a) common practice in neonates & children

*- The manuscript has been reviewed for typos and grammar mistakes, according to the Reviewer suggestion.*

ii.) sentence structure (e.g. line 228-234) Instead of 'The shear stress produces cell damage ...', should be 'The shear stress causes cell damage ...'

*- The sentence was edited as per Reviewer suggestion.*

iii.) avoid vague statement such as: (Line 231)- 'This process ...' (Line 233)- 'These events ...' (Line 273)- 'Anyway, standardized triggers have not been established yet.'

Sentences like the above (iii) should be avoided.

- *These sentences were rephrased in the revised manuscript version.*

**Comment 2. Rationale, logical flow & content**

i.) Several sections are superficially covered such as 'Transfusion impact on the immune function'. This section should be expanded significantly. As immune function is a wide topic (e.g. humoral vs adaptive etc.), the authors should highlight the main area they are discussing and what are the main gaps despite the fact that there is limited information.

- *The immune function section was revised and widened. according to the Reviewers suggestion. Unfortunately, as explained above, the literature offers very few information about the impact of blood products transfusion during ECMO on immune function.*

ii.) Logical flow

(Line 119)- 'Nevertheless, these findings are influenced by a high level of uncertainty, as a result of poor quality of the studies and heterogeneity'... refers to? Such conclusion is made based in what evidence? Be specific.

Several other sections also lack the logical flow.

- *The manuscript has been revised to address the issues raised by the Reviewer.*

iii.) The authors should also include their views on the main gaps in existing evidence for the effects of transfusions in ECMO for example, in the paediatric setting etc.

- *This was more widely discussed in the revised paper.*