



Letter to the Editor

Reply to: Comment on “The role of graft reperfusion sequence in the development of non-anastomotic biliary strictures following orthotopic liver transplantation: A meta-analysis”

Mohamed Bekheit^{a,b,c,*}

^a Department of Surgery, Aberdeen Royal Infirmary, Aberdeen, UK

^b Division of Clinical Sciences, Aberdeen University, Aberdeen, UK

^c Department of Surgery, El Kabbary Hospital, El Kabbary, Alexandria, Egypt

The Author Reply:

Thank you for extending the opportunity of discussion among interested scientists. We received with interest and curiosity the letter submitted by Dr Pietersen and his colleagues in response to our recently published study addressing the impact of reperfusion sequence on the non-anastomotic biliary stricture [1].

We cannot agree more with the authors that this topic, despite its importance, has not received the attention it deserves until this date. While it is logical to believe that there is a role for the portal blood supply to the bile duct, this has not been confirmed or quantified, unfortunately. The authors quoted Dr. Slieker et al. [2], where they studied the microcirculation flow in cases undergoing pylorus preserving pancreaticoduodenectomy. Clamping the portal vein is thought to increase the local adenosine which increases in the arterial flow as a buffering mechanism [3]. However, it is not known whether this mere mechanism leads to preferential recruitment of the arterial blood flow towards the sinusoidal system at the expense of the periductal plexus.

As there is arterial supply to the duct, there should be venous drainage and in a very low pressure/flow situation as in the other quoted study [4], the venous backflow could contribute to the homogenous flow. This is good for the transplanted graft but does not mimic the physiological encounter *in vivo*.

We grouped initial artery reperfusion to simultaneous artery and portal vein reperfusion as both should simulate the avoidance of relative warm ischemia of the duct if it is predominantly supplied by the artery – which does not contradict the finding from

Dr. Slieker et al. [2] – and compared this to the initial portal reperfusion which simulates the relative warm ischemia condition in that context.

Regardless of the claimed percentage of contribution of both arterial and portal reperfusion, we know from practice that transplanted livers and jaundiced patients do not tolerate arterial insufficiency. This is indeed a strong indicator that arterial supply to the bile duct is crucial.

There are various controversies and uncertainties related to this topic. Therefore, at the first instance, we proposed the outcome reporting form in our previous study as a guide for future studies [1].

References

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- [3] Lauth WW. Mechanism and role of intrinsic regulation of hepatic arterial blood flow: hepatic arterial buffer response. *Am J Physiol* 1985;249:G549–G556.
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* Corresponding author at: Department of Surgery, Aberdeen Royal Infirmary, Aberdeen, UK.

E-mail address: dr_mohamedbekheit@hotmail.com (M. Bekheit)