

Dear reviewer,

First I would like to thank you for constructive review. We have revised the text to address your concerns and hope that it contains all the details.

The paper has been supplemented with the missing information about abdominal perfusion pressure “In the state of elevated IAP, renal function should be considered at all times during therapy. The pressure determining the proper blood flow through the abdominal organs is so-called abdominal perfusion pressure (APP). It is calculated using the mean arterial pressure (MAP) and IAP. APP results from the difference between these two variables. The organs most exposed to changes in IAP are the kidneys. The divertive parameter from APP that refers directly to kidney function is called the renal filtration gradient (RFG). The RFG, assuming a pressure in the proximal tubule is equal to IAP, can be calculated from the formula $RFG = MAP - 2 \times IAP$. Acute kidney injury induced by declined renal blood flow, venous congestion and parenchymal compression is a common finding among all patients with IAH [28–32].“ and abdominal wall compliance “The abdominopelvic cavity is the body chamber defined by rigid bone structures and soft tissue. A slow increase in internal pressure causes the walls to expand, but their abilities to compensate are limited. When they are exceeded, a force applied to the diaphragm causes its cephalic shift, first described in 1922. This movement results in a reduced volume of the thoracic cavity and changed distribution of pressures. This concept called abdominal compliance (AC) is defined as a measure of the capability of abdominal expansion, which depends on the elasticity of the abdomen and diaphragm and can be expressed as a change in intra-abdominal volume per change in intra-abdominal pressure. AC depends on both these components and its dynamic of changes over time is thus hard to evaluate AC directly. Nevertheless, it should be considered an important component of intra-abdominal pressure, playing a significant role in organ interactions and end-organ perfusion. Understanding AC helps in applying the right management strategies and preventing the consequences of increased IAP. Particularly patients with IAH and reduced AC can benefit even from a small reduction in IAV [14–15]”.

The treatment section was updated according to your observations as follows “If all of the above have failed, surgical intervention might be indicated. Abdominal decompression technique called open abdomen (OA) therapy is proven to enhance renal function and urine output, improve cardiac index and lung compliance [48]. These changes have major repercussions on haemodynamics. Lowered CVP and higher tidal volume are observed, which physicians must be prepared for and adjust resuscitation as well as parameters of mechanical ventilation appropriately. The intensivist should optimize the process, aiming for early fascial closure to avoid delayed extubation, development of fistulas and septic complications of extended OA therapy”.

Furthermore editorial corrections to references in brackets and grammatical points were made and the text was referred to medical English translation office.

Best regards,

Piotr Łagosz