

Nevertheless, after fluid administration, it is also essential to assess the therapeutic efficacy and to look for possible adverse effects” Monnet and Teboul (2018).

Abstract:

Many efforts have been made to predict, before giving fluid, whether it will increase cardiac output. Nevertheless, after fluid administration, it is also essential to assess the therapeutic efficacy and to look for possible adverse effects. Like for any drug, this step should not be missed. Basically, volume expansion is aimed at improving tissue oxygenation and organ function. To assess this final result, clinical signs are often unhelpful. The increase in urine output in case of acute kidney injury is a poor marker of the kidney perfusion improvement. Even if oxygen delivery has increased with fluid, the increase in oxygen consumption is not constant. Assessing this response needs to measure markers such as lactate, central/mixed venous oxygen saturation, or carbon dioxide-derived indices. If tissue oxygenation did not improve, one should check that cardiac output has actually increased with fluid administration. To assess this response, changes in arterial pressure are not reliable enough, and direct measurements of cardiac output are required. In cases where cardiac output did not increase with fluid, one should check that it was not due to an insufficient volume of fluid administered. For this purpose, volume markers of cardiac preload sometimes lack precision. The central venous pressure, in theory at least, should not augment to a large extent in fluid responders. The worst adverse effect of fluids is the increase in the cumulative fluid balance. In patients with acute respiratory distress syndrome (ARDS), the risk of aggravating pulmonary oedema should be systematically assessed by looking for increases in extravascular lung water, or, more indirectly, increases in central venous or pulmonary artery occlusion pressure. In ARDS patients receiving fluid, one should always keep in mind the risk of inducing/aggravating right ventricular dilation, which should be confirmed through echocardiography. The risk of increasing the intra-abdominal pressure should be carefully sought in patients at risk. Finally, fluid-induced haemodilution should not be neglected. Like for any drug which has inconsistent effectiveness and may exert significant harm, the correct fluid management should include a cautious and comprehensive assessment of fluid-induced benefits and side effects.

Full Text



Article describes how clinicians can assess the efficacy of IV fluid administration | 2

Reference:

Monnet, X. and Teboul, J-L. (2018) My patient has received fluid. How to assess its efficacy and side effects? *Annals of Intensive Care*. April 24th. .

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