

Levosimendan: a role in the management of patients with severe heart failure?

Levosimendan is an intriguing drug which associates inotropic and vasodilator properties. The inotropic effect is independent from beta receptors and results from an increased affinity of troponin C to calcium, without deleterious effect on myocardial oxygen consumption. In addition, its pharmacokinetic properties are characterized by the very long half-life of an active metabolite, as opposed to the ultra-short-acting dobutamine. However, levosimendan did not show superiority to dobutamine in patients with acute heart failure (Mebazaa et al., JAMA 2007). Recently, the drug also failed to provide a clear benefit when given prophylactically prior to cardiac surgery in high-risk patients (Mehta et al. NEJM 2017, Cholley et al. JAMA 2017). However, the unique properties of levosimendan are worth considering for specific heart failure situations such as: patients receiving beta-blockers, those who are expecting heart transplantation and cannot be weaned from dobutamine, for facilitating veno-arterial ECMO weaning, or when the usual therapeutic strategies are failing to provide adequate relief.