Inotropes are frequently used after cardiac surgery in order to treat a low cardiac output syndrome (LCOS) after weaning from cardiopulmonary bypass (CPB), or for hypotension during postoperative period. Despite a wide range of available inotropic agents, no consensus exists regarding the optimal treatment. The systematic review of the literature is presented to establish, present and classify the evidence regarding choice of inotropic drugs. No sufficient data exist to allow selection of a specific inotropic agent in preference over another in adult cardiac surgery patients; the inodilators dobutamine and phosphodiesterase inhibitors (PDIs) are efficacious drugs for management of the LCOS; although all β-agonists can increase cardiac output, the best studied β-agonist and the one with the most favourable side-effect profile appears to be dobutamine; PDIs increase the likelihood of successful weaning from CPB as compared with placebo. Multicentre randomized controlled trials focusing on clinical outcomes are needed, specially concerning three points:

- The underlying cardiac failure physiopathology (dilation, obstruction, associated right heart failure…) might impede on inotropic effects and therefore might impede on inotropic choice;
- Combination of treatments is often used in clinical practice and can involve either inodilators or inoconstrictors; an important assessment of the effects of such combinations remains to be done;
- For an upcoming multicentre randomized controlled trial, the rationale for use of inodilators, with potential combination with inoconstrictors, should carefully consider which appropriate monitoring is to be used.