Levosimendan to prevent acute organ dysfunction in sepsis: the LeoPARDS RCT

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Plain English summary

The LeoPARDS RCT

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Plain English summary

Septic shock is a common life-threatening condition. It occurs when infection causes blood pressure to fall to dangerous levels, reducing blood flow to vital organs. Adrenaline-like drugs are commonly used to improve a patient's blood pressure, but they can have serious side effects. Levosimendan is a new type of drug that works in a different way from adrenaline-like drugs, potentially avoiding these side effects.

The LeoPARDS (Levosimendan for the Prevention of Acute oRgan Dysfunction in Sepsis) trial investigated whether or not using levosimendan to treat patients who had septic shock improved the function of different organs and improved recovery.

Patients who had septic shock were randomised to receive a 24-hour infusion of levosimendan or placebo, in addition to standard care. Patients were followed up daily for up to 28 days and then at 6 months. A total of 2382 patients were assessed and, of these, 516 patients from 34 intensive care units across the UK took part in the trial from January 2014 to December 2015.

Levosimendan did not improve organ function or any other outcomes when added to standard care in septic shock. Levosimendan is known to dilate blood vessels and this might improve the blood supply to various organs. However, in patients receiving levosimendan, higher doses of adrenaline-like drugs had to be given to maintain blood pressure because of the dilatation of the blood vessels. The patients then had a faster heart rate and more irregular heartbeats. In addition, those patients who required help with breathing from a ventilator required this support for longer.

We cannot recommend the use of levosimendan to treat routine cases of septic shock. Although it is disappointing that this study has not shown a benefit from using levosimendan in sepsis, it has still provided useful information. Knowing when not to use drugs is important to reduce the risk of side effects and to avoid wasting precious resources.

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