

## PHARMACOTHERAPY

## Promising new drug for the treatment of hyperkalaemia

Sodium zirconium cyclosilicate (ZS-9) effectively lowers the serum potassium ( $K^+$ ) level in patients with mild or moderate hyperkalaemia, according to the results of a new phase III trial. Hyperkalaemia (a plasma  $K^+$  level  $>5.0$  mmol/l) is common in patients with heart failure, as well as those with chronic kidney disease. Therapies for these conditions, such as renin–angiotensin–aldosterone system (RAAS) blockers, can also induce hyperkalaemia. A  $K^+$  level  $>6.0$  mmol/l can lead to cardiac arrhythmias, arrest, and death.

In a multicentre, double-blind trial, 753 patients with hyperkalaemia were randomly assigned to receive one of four doses of ZS-9 (1.25 g, 2.5 g, 5.0 g, or 10.0 g) or placebo three times daily for 48 h. Overall, 40% of the patients had heart failure, 75% had reduced renal function, 60% had diabetes mellitus, and 65% were receiving RAAS-inhibitor therapy. Hyperkalaemia was normalized in patients who received 2.5 g,

5.0 g, or 10.0 g of ZS-9, but not in those who received 1.25 g of ZS-9 or placebo.

In stage 2 of the trial (days 3–14), patients with normokalaemia at 48 h were randomly allocated to continue receiving ZS-9 or to switch to placebo once daily. In patients who continued with 5.0 g or 10.0 g of ZS-9,  $K^+$  levels were maintained at 4.5–4.7 mmol/l, whereas those who received placebo had a  $K^+$  level  $>5.0$  mmol/l.

Patients with marked hyperkalaemia ( $>6.5$  mmol/l) were excluded from the trial, so the effectiveness of ZS-9 in these patients remains to be established. A 1-year trial to determine the long-term safety and efficacy of the drug is ongoing.

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