Calcimimetics for secondary hyperparathyroidism in end-stage renal disease patients: a meta-analysis

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OBJECTIVES

Cinacalcet hydrochloride acts on the parathyroid calcium receptors to suppress parathyroid hormone secretion. In this study, we systematically evaluate the efficacy and safety of cinacalcet on secondary hyperparathyroidism in patients with end-stage renal disease.

METHODS

MEDLINE, EMBASE, the Cochrane Library and conference proceedings were searched for randomized controlled trials (RCTs) evaluating any calcimimetic against placebo or another agent in adults with end-stage renal disease and secondary hyperparathyroidism.

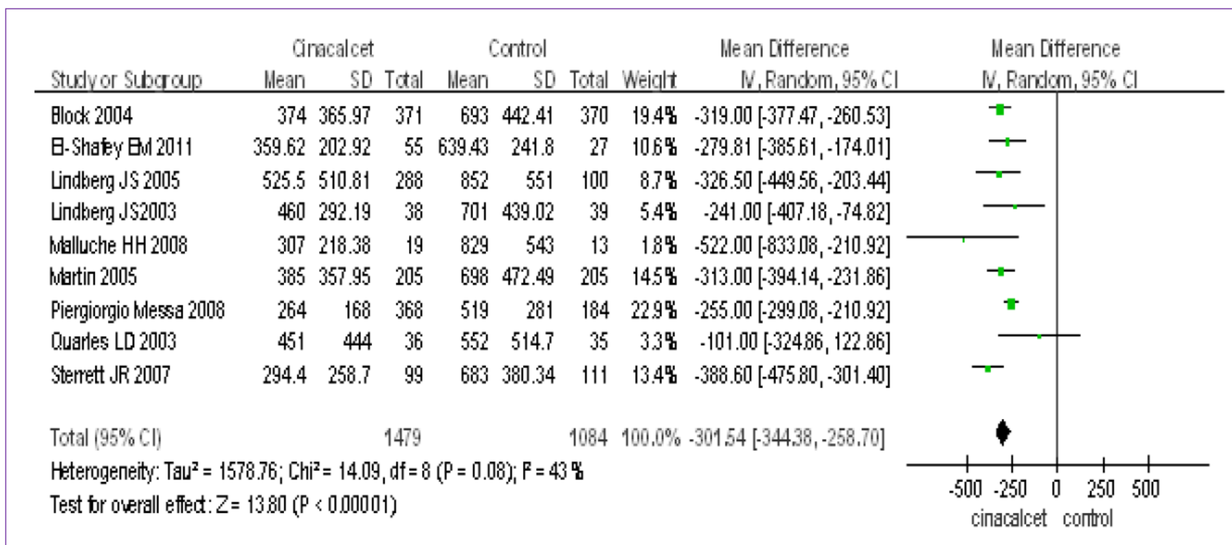

Figure 4:Comparison of cinacalcet versus controls on iPTH

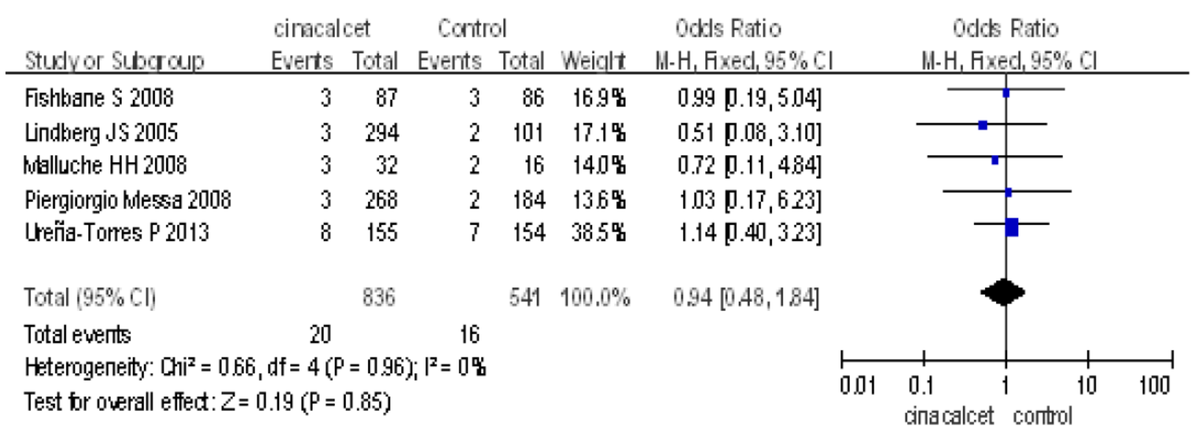

Figure 11: Comparison of cinacalcet versus controls on all-cause mortality

RESULTS

14 trials (3387 patients) were included. The meta-analysis showed that compared with conventional therapy, cinacalcet could significantly decrease serum parathyroid hormone (WMD= -301.54pg/mL, 95% CI:-344.3 to -258.7, P＜0.05), calcium (WMD= -0.83mg/dL, 95% CI:-0.91 to -0.74), P ＜0.05), and phosphorus (WMD= -0.34 mg/dL, 95% CI:-0.46 to -0.21, P＜0.05). Cinacalcet increased nausea (RR =0.12, 95% CI:0.07 to 0.18, P＜0.05) , vomiting (RR =2.71 , 95% CI: 2.13 to 3.44, P＜0.05), diarrhea (RR =1.48, 95% CI: 1.07 to 2.04, P＜0.05),and asymptomatic hypocalcaemia (RR =9.99, 95% CI: 5.39 to 18.52, P＜ 0.05), but they were usually transient and mild to moderate in severity. The mortality was similar (RR =0.94, 95% CI: 0.48 to 1.84, P＞0.05).

CONCLUSIONS

We confirmed that cinacalcet suppresses parathyroid hormone and lowers calcium and phosphorus in secondary hyperparathyroidism patients receiving dialysis without increasing all-cause mortality, but increases risks of nausea, vomiting, diarrhea and hypocalcaemia.

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