Iranian Journal of Pharmacology and Therapeutics

Volume 5, Issue 1, 2006, Pages 73-76

Comparison of phosphate lowering properties of calcium acetate and calcium carbonate in hemodialysis patients

Naghibi, M.[a] , Nazemian, F.[a] , Rajabi, O.[bc] , Hami, M.[a]

[a] Nephrology Ward of Imam Reza Hospital, Mashad University of Medical Sciences (MUMS), Mashad, Iran

[b] Department of Medicinal Chemistry, School of Pharmacy, MUMS, Mashad, Iran

[c] Department of Immunology, Bu Ali Reasech Center, MUMS, Mashad, Iran

View references (15)

Abstract

Hyperphosphatemia has an important role in the development of secondary hyperparathyroidism and bone disease in patients with end-stage renal disease (ESRD). The most effective method of phosphate elimination lies with phosphate binders, the agent that more commonly used, calcium carbonate, is not an ideal binding agent. In this regard, calcium acetate has been reported to have more or at least a similar phosphate binding efficacy and less pronounced hypercalcemic effect. However, this subject is still a matter of controversy. This study was designed to compare the efficiency of these salts. Preparation of calcium acetate and comparison of the phosphate binding power and hypercalcemic effect of calcium acetate with that of calcium carbonate in hemodialysis patients. Thirty stable ESRD patients undergoing regular hemodialysis for mean 4.23 years (SD 3.63) were studied. Half of the patients were started on calcium acetate for a month. Then, after two weeks wash out period, they received calcium carbonate for a month. The others followed an inverse protocol. 24 patients completed the study. A significant decrease in plasma phosphate levels was only observed after treatment with calcium acetate [6.65 mg/dL (SD 1.38) vs. 5.83 mg/dL (SD 1.55) $p < 0.05$]. Calcium acetate may be a better choice in handling of hyperphophatemia in ESRD patients and when calcium acetate is used, control of hyperphophatemia can be better achieved with a lower risk of hypercalcemia. Copyright © 2006 by Razi Institute for Drug Research (RIDR).

Reaxys Database Information

|

Author keywords

Calcium acetate; Hemodialysis; Hypercalcemia; Hyperphosphatemia

Indexed Keywords

EMTREE drug terms: calcium acetate; calcium carbonate; phosphate

EMTREE medical terms: adult; article; calcium blood level; clinical article; clinical trial; controlled clinical trial; controlled study; crossover procedure; drug binding; drug efficacy; drug synthesis; female; hemodialysis patient; human; hypercalcemia; kidney failure; male; phosphate blood level; randomized controlled trial; tablet formulation

Chemicals and CAS Registry Numbers: calcium acetate, 62-54-4; calcium carbonate, 13397-26-7, 13701-58-1, 14791-73-2, 471-34-1; phosphate, 14066-19-4, 14265-44-2

ISSN: 17352657 Source Type: Journal Original language: English

Document Type: Article

View in table layout

References (15)

Page Export Print E-mail Create bibliography

Edinburg: Renal osteodystrophy

1 Ed REN home [homepage on the Internet, updated December 2003, Available from http://renux.dmed.ed.ac.uk/edren/Handbookbits/HDBKosteodyst.html