

EFFECT OF CHITOSAN IRON(III) CROSSLINKING (CH-FECL) IN THE REDUCTION OF LEVELS SERUM PHOSPHORUS IN RATS WITH RENAL FAILURE INDUCED BY ALLOXAN

Schöninger, L.M.R.; Dall' Oglio, R.C.; Rodrigues, C.A.; Bürger, C.
Núcleo de Investigações Químico-Farmacêuticas (NIQFAR), Curso de Farmácia/CCS, Universidade do Vale do Itajaí (UNIVALI), SC, Brazil

Hyperphosphatemia is recognized to the increased risk of cardiac death in end-stage renal disease and hemodialysis patients. Although phosphate binders can effectively lower serum iP levels into the normal range, these agents may show some second effects like hypercalcaemia and toxicity. In this work we evaluated the effect of chitosan iron (III) crosslink (CH-FeCL) polymer as phosphate binder in treatment of rats with renal failure. The renal failure was induced by alloxan (150 mg/Kg, intraperitoneally). The control group received normal diet; alloxan group received normal diet; phosphate group received diet supplemented with phosphate 1.2%; CH-FeCL group received diet supplemented with phosphate 1.2% and CH-FeCL 0.5% (0.054% Fe elemental) during 15 days. The serum phosphorus level of the CH-FeCL group was significantly reduced (4.12 ± 0.3 mg/dL – female; 4.10 ± 5.62 mg/dL - male) after 15 days when compared with phosphate group (6.72 ± 0.72 mg/dL - female; 5.62 ± 0.20 mg/dL). The serum iron concentration of the CH-FeCL group did not differ from control group either sex. CH-FeCL polymer decreases the intestinal phosphate absorption in rats with renal failure and hold promise for the treatment of phosphate retention in patient with renal failure.

Keywords: Hyperphosphatemia; Chitosan iron (III); End-Stage Renal Disease

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