Medicine candidates of rare earths nano-lanthanum hydroxide in preclinical studie: a novel phosphate binders

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Abstract

Objective:Determining nano-lanthanum hydroxide in the treatment of hyperphosphatemia compared to other phosphate binders with higher potency and therapeutic advantages.

Methods: We used three kinds of phosphorus binders(nano-lanthanum hydroxide, lanthanum carbonate and normal size lanthanum hydroxide) agent on adenine-induced model of renal failure hyperphosphatemia in rats , and then we detected of physiological and biochemical indicators and observed immunohistochemistry experiments to determine the efficacy of each drug.

Results: The therapeutic effect of nanometer lanthanum hydroxide middle dose group in rat hyperphosphatemia model was better than other groups. In drug's safety, no side effects were observed in rats in long-term administration.

Conclusion: The titer of nanometer lanthanum hydroxide in several phosphorus binders is obvious, which is better than lanthanum carbonate of FDA-listed fusilino and normal size lanthanum hydroxide. It has better therapeutic advantages, safety is reliable,side effects are very little or not.

Keywords: Chronic renal failure, hyperphosphatemia, nano-lanthanum hydroxide, lanthanum carbonate