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Ibudilast Ameliorates Acute Pancreatitis through Downregulation of Interleukin-1 Beta and Lipase Enzyme

Alaa Ghazi [1] Sahar A. Majeed [2] Nazar J. Metib [3] Sameer H. Abood [4] Hassan Alaqouli [5] Najah R. Hadi [6]*

[1] AL-Najaf AL-Ashraf Health Directorate, Iraq.
[2] Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Kufa, Najaf, Iraq.
[3] Holy Karbala Health Directorate, AL-Hussain Teaching Hospital, Iraq.
[4] Department of Pharmacology, College of Medicine, University of Al-Ameed, Kerbala, Iraq.
[5] Department of Surgery, Faculty of Medicine, University of Kufa, Najaf, Iraq.
[6] Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Kufa, Najaf, Iraq.

Abstract

Background: Acute pancreatitis (AP) is severe inflammation of the pancreas that can be of two major types: mild AP (MAP) and severe AP (SAP).

Objective: To study the therapeutic effect of Ibudilast in comparison with older drug, octreotide, in the rat model of AP.

Methods: A total of 48 male rats were divided into 8 groups with each group consisting of 6 rats. Acute Pancreatitis was induced by L-arginine model which has a high reproducibility. Octreotide and Ibudilast were administered individually and in combination at 0, 8 and 16 hours after induction. After 24 hours of treatment, each rat was weighed and blood samples were withdrawn for ELISA test for interleukin- 1 beta (IL1β) and biochemical test for serum lipase, and then the pancreas was extracted for histopathological examination.

Results: In Octreotide and Ibudilast groups there was a statistically significant decrease in serum IL-1β, lipase enzyme, and decrease in histopathological changes.

Conclusion: Ibudilast and octreotide can significantly attenuate the local and systemic effect of AP. Ibudilast and the combination decreased serum lipase more significantly than octreotide. Thus these drugs can be used effectively in cases of pancreatitis as it leads to high morbidity and mortality.

Author Keywords

Acute pancreatitis, Ibudilast, Interleukin-1 beta, Octreotide, Serum lipase

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