Effect of N-benzoyl-D-phenylalanine, a new potential oral antidiabetic agent, in neonatal streptozotocin-induced diabetes in rats

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Abstract:
The present investigation was undertaken to study the effect of treatment with D-phenylalanine derivative and metformin in neonatal streptozotocin (nSTZ)-induced non-insulin-dependent diabetes mellitus (NIDDM) in rats. To induce NIDDM, a single dose injection of streptozotocin (STZ) (100 mg kg$^{-1}$: ip) was given to 2-day-old rats. After 10–12 weeks, rats weighing above 150 g were selected for screening in NIDDM model. They were checked for fasting blood glucose levels to conform the status of NIDDM. D-phenylalanine derivative (50, 100 and 200 mg kg$^{-1}$) was administered per os (po) for 6 weeks to the rats with confirmed diabetes. A group of diabetic rats was also maintained and this group received metformin as comparative drug. Significant decrease in blood glucose with significant increase in plasma insulin was observed in group receiving 100 mg of D-phenylalanine derivative plus 500 mg of metformin.

Key words:
N-benzoyl-D-phenylalanine, metformin, streptozotocin, diabetes