ORAL GLYCINE AND L-ARGININE ADMINISTRATION ATTENUATES MONOSODIUM GLUTAMATE COMPLICATIOS ON PANCREAS STRUCTURE IN ALBINO RATS

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Abstract - The present works aimed to elucidate any histological changes in pancreas islets tissue of rats when treated with the commonly used food additive, Monosodium glutamate (MSG) were carefully studied. The rats (n=70), average weights of 240 ± 20 gm were randomly assigned into six treatments (n=10) and control (n=10) groups. The rats in the treatment groups received 10 mg/200ml distilled water (DW)for each group of (glycine, l-arginine (ARG) , MSG, glycine + MSG ,ARG + MSG and the last group were combination among glycine , ARG and MSG for forty fife days, while the control group administration the same volume of DW. The rats were sacrificed after the last day of treatments. A portion of pancreatic tissue was dissected out and fixed in 10% buffered neutral formal saline and processed for routine stained with hematoxylin and eosin (H&E). The histological findings after H&E methods for pancreas sections from various treatment groups showed varying degree of necrosis, apoptosis, hyperplasia, swallowing and hypertrophic in nucleus in the pancreatic islet cells as well as, irregularity in shape and hypertrophic in islet with hyperplasia in connective tissues, we can conclude that the MSG cause pancreas toxicity and tissue alteration in cooperation to combination group which showed normal architecture, in shape and size of pancreatic islet and acini similar to control group. These findings showed that glycine and ARG may act as antioxidant to prevent change caused by MSG consumption, and may have some deleterious effects on the pancreas of adult Wistar rats which is reversible and does not lead to permanent infarctions, but the normal structure of the pancreas would need a long time to be regained. It is recommended that further studies aimed at corroborating these findings be carried out.

Keyword - MSG, Glycine, L-arginine, Pancreas Rat