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Differential effects of infusion of Orexin A and Orexin B into basolateral amygdala on feeding behaviour in Albino rats

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Original article

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Abstract

Background: Orexin A and B are two peptides with 33 amino acid and 28 amino acids discovered in the hypothalamus. These were believed to have a role in the regulation of ingestive behaviour. In the present study, we infused orexin A and B and their specific receptor antagonists (Orexin A - SB334867, Orexin B - TCS-OX2-29) into the basolateral amygdala (BLA) and measured the food intake and water intake in the following time durations. **Materials and methods:** Wistar albino male rats (n=48) were grouped into Orexin A/Orexin B infusion. Further, subgroups were done to infuse different dosages. **Results:** The food intake and water intake did not show any significant alteration in the Orexin injected animals in both dosages. However, there was a small increase in the food and water consumption in the Orexin A antagonist infused group. There was significantly increased food intake and water intake following the Orexin B infusion, which appeared to be dose dependent. Conversely, treatment with the Orexin B antagonist, decreased the parameters. **Discussion:** The Orexin A does not appear to be involved in the modulation of food and water intake by BLA, though there was a small variation following the antagonist infusion, which lasted only for the first hour after infusion. Orexin B, showed a dose dependent increase in the parameters, which was reversed on the infusion of its antagonist. Therefore, it can be concluded that the orexinergic inputs to the BLA are from the hypothalamic centers. Further studies are needed to analyze the interaction between amygdala and hypothalamus, and involvement of orexinergic system in the mechanism.

Key Words: Orexin A, Orexin B, Orexin antagonist, food intake, water intake, Infusion

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