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A Preliminary study of the water intake pattern in rats

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The objective of this preliminary study was to evaluate the water intake pattern in rats. The experiment was carried with Charles foster strain healthy albino rats in both sexes bred and kept in the animal house attached to the Pharmacology laboratory of the Institute of Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurvedic University, India. They were maintained on Navchakan Oil Mill's "Amrut" brand rat pellet feed and exposed to natural day and night cycles. The trial was performed in three replicates, each containing six rats. Simple random sampling method was applied. Rats weighing between 178 – 226 g were used. The method described by Dixit. U. D., Ravishankar. B. and Dwivedi. R.B. was adopted. (Dixit et al., 1995) Duration of the experiment was eight days. Rats were placed in separate metallic cages. Each day, 100 ml of tap water and 50 g of food were supplied to each rat in the morning at 9.00 a.m. Water was given to the animals by glass bottles attached to the cages. Water remaining in each bottle was recorded each day. Body weight was recorded before and after the experiment.

No significant difference in water intake could be observed in group 2 and 3 in comparison to group 1 rats. The mean water intake of rats in the term of the absolute value of group 1 was 43.43 ± 1.95 ml, group 2 was recorded as 45.15 ± 2.25 ml and group 3 has shown 43.06 ± 3.84 ml intake. Differences obtained in between the groups were statistically insignificant.

Intake water per unit of body weight per day was calculated by the rule of three to find the relative values. When the relative values were calculated, the mean water intake of rats in the group 1 was 20.62 ± 1.03 ml where the group 2 was 20.93 ± 1.48 ml and group 3 was 19.62 ± 2.09 ml respectively. The result was not statistically significant in unpaired 't' test.

Variations gained in both the absolute values and the relative values in this preliminary study were not statistically significant. The result obtained from this study has ensured the homogenous water intake pattern of the albino rats and the suitability of using animal models for the experimental studies.