

## SUMMARY

The results of this present study can be summarized as following

1. Intraperitoneal injection of sodium barbital 150 mg/kg twice daily for 5 , 15 and 25 days could result in tolerance to this drugs.
2. Sodium barbital tolerance rats developed supersensitivity to pilocarpine and this supersensitivity of atrial cells to pilocarpine was gradually decreased and returned to normal within 10 days after the withdrawal of sodium barbital.
3. The relative potencies of cholinergic agonists in producing negative chronotropic are carbachol > methacholine > pilocarpine in control rats.
4. In the sodium barbital 15 days treated group, carbachol which is more potent than pilocarpine in control group is less affected than pilocarpine.
5.  $pA_2$  values of atropine in the normal and sodium barbital treated groups are significantly different ( $pA_2$  , control =  $10.21 \pm 0.17$  , sod. barbital treated =  $8.89 \pm 0.05$ ) which suggested that there are some alteration in the properties of muscarinic receptors, such as an increase in affinity of the cholinceptor to an agonist.

6.  $pA_2$  values of propranolol in the normal and after sodium barbital withdrawal for 3 days groups are also significantly different. The  $pA_2$  values for the control is  $11.53 \pm 0.23$  while in the latter group is  $8.30 \pm 0.04$ . These  $pA_2$  values suggested that the increase in maximal response is not due merely to the increase in the number of the receptor, but it may also due to the alteration of the properties of adrenoceptors, such as an increase affinity to the  $\beta$  - adrenoceptor agonist.

## BIOGRAPHY

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