

## CURRENT LITERATURE

**Effects of Hallucinogenic and Tranquilising Drugs on Serotonin Evoked Uterine Contractions** by Costa E. and Himwith. H. E. (1956) : *Proc. Soc. Expt. Bio. Med.*, 91, 39.

The authors evaluated the antagonistic power and specificity of Frenquel (alpha-4-piperidyl diphenyl carbinol hydrochloride), chlorpromazine, reserpine, desmethoxy reserpine, lergigan, mescaline and LSD against serotonin creatinine sulphate, acetylcholine and oxytocin induced contractions in spayed rat uterus.

Frenquel (0.8 mg./L.), chlorpromazine (0.1 mg./L.) and reserpine (0.4 mg./L.), antagonise serotonin induced uterine contractions, though they do not affect sensitivity of the uterus of spayed rats either to ACh. or oxytocin. The period of antagonism is longest with reserpine and shortest with Frenquel. Mescaline (0.1 mg./L.) causes facilitation of serotonin activity and in highest amounts causes contraction by itself. A relatively high concentration of LSD (1 mg./L.) antagonises both serotonin and mescaline-induced uterine activity. In contrast low concentrations of LSD (0.05 to 0.2 mg./L.) facilitate the effects of serotonin and of mescaline on the rat uterus.

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**Methitural, A New Intravenous Anaesthetic: Comparison with Thiopental in the Cat, Dog and Monkey** by Irwin, S. ; Stagg, R. D. ; Dunbar, E & Grovier, W. M. (1956) : *J. Pharma. and Expt. Therap.*, 116 317.

Methitural is the sodium salt of 5-(2'-(methyl-thioethyl)-5-(1-methyl butyl)-2-thio barbituric acid. Investigation in cat, dog and monkey have showed it to possess two third of the anaesthetic potency of thiopental.

Following equivalent anaesthetic doses, recovery from anaesthesia was significantly more rapid with methitural than with thiopental, and cumulative action was considerably less than that with thiopental or thioamylal. There was less respiratory depression and less cardiac acceleration with methitural than with thiopental anaesthesia. Atropine, morphine, succinyl choline, d-tubocurarine and combination thereof were found to be compatible with methitural in the dog. No tolerance or cumulative action was noted in dog following daily intravenous administration of methitural (45 mg./kg.). Microscopic examination of tissues following chronic administration showed thiopental to be considerably more toxic to liver than methitural.

**Protective Effects of Ganglionic Blocking Agents on Traumatic Shock in the rat** by *Ross, C. A. and Herczeg, S. A. (1956): Proc. Soc. Exp. Bio. Med. 91, 196.*

Effectiveness of chlorisondamine, mecamlamine, pentolinium, hexamethonium and TEA in reducing the mortality in rat subjected to traumatic shock by tumbling in rotating drums as described by Noble and Collip (1942) is discussed. Nine hundred turns was chosen as standard trauma level in these experiments to assure a mortality of 50 per cent. Drugs were injected intraperitoneally 15 or 30 minutes prior to drumming. Significant protection from death due to drum shock was provided by chlorisodamine, mecamlamine, pentolinium and hexamethonium at certain critical dose ranges, whereas TEA failed to provide protection from mortality. These results give support to previously reported observations that blockade of the sympathetic nervous system affords protection from lethal effect of physical trauma.

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**The Action of Sympathomimetic Amines on Intravenous Anaesthesia in Rats** by *Milosevic, M. P. (1956): Arch. Int. Pharmacodyn., 106, 437.*

The effect of sympathomimetic amines on the duration of anaesthetic actions of various anaesthetic drugs was studied in rats. In well tolerated doses injected intraperitoneally immediately before or after the injection of anaesthetic agent, adrenaline prolonged the duration of thialbarbitone anaesthesia, the prolonging effect being proportional to the dose used. The prolongation of anaesthesia was particularly pronounced when the animal was anaesthetised with a relatively small dose of anaesthetic. The effect of median lethal dose of thialbarbitone was not significantly changed by previous administration of adrenaline. Pretreatment with adrenaline also significantly prolonged the anaesthetic effect of barbital, pentobarbital, hexobarbital, chloral hydrate, paraldehyde, tribromethanol, chlorobutanol, chloralose and ethanol. Nor-adrenaline, cobefrine, synephrine, suprifin and ephedrine prolonged the thialbarbitone anaesthesia in rats; paredrinol was ineffective, whereas amphetamine and methamphetamine shortened the recovery time of righting reflex in rats anaesthetized by the thialbarbitone.

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**Effects of Rauwolfia Alkaloids on Hypothalamic, Medullary and Spinal Vasoregulatory Systems** by *Bhargava K. P. and Borison, H. L. (1955): Jour. Pharm. and Expt. Therap., 145, 145.*

The effects of the Rauwolfia preparations, alseroxylon and reserpine, on vasoregulatory mechanisms were studied in vagotomized cats maintained on

artificial ventilation. No evidence could be obtained for any local activating effect of rauwolfia on afferent receptor sites. Rapid i. v. injection of Alseroxylon produced an immediate and transient fall in blood pressure attributable to a peripheral (cardiac or vascular) action, as concluded from experiments on spinal preparations. Studies on the differential effects of rauwolfia alkaloids on hypothalamic, medullary and spinal vasomotor activity were performed. The stereotaxic technic was utilized to determine supraspinal electrical excitability; elevation of cerebrospinal fluid pressure was used to evoke pressor responses from the spinal animal. Alseroxylon was found to have a depressant action at the spinal as well as the medullary and hypothalamic levels. Reserpine, on the other hand, did not exhibit a significant spinal component of action but exerted a definite depressant effect, though of moderate degree, on supraspinal mechanisms. In the decerebrate animal, in the absence of the hypothalamus, rauwolfia is still capable of effecting its hypotensive and reflex-inhibitory actions.

The physiological implications of these findings are discussed in the light of recently proposed hypotheses concerning the locus of the hypotensive action of rauwolfia.

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**Role of the Spleen in Acclimatization to Hypoxia** by Cook S. F. and Alafi M. H. (1956) : *Am. J. Physiol.*, 186, 369.

In order to determine quantitatively the participation of the spleen and the bone marrow separately, five groups of splenectomised and non-splenectomised mice totalling 87 animals were exposed to a simulated altitude of 15,000 feet continuously for periods of 30-58 days. R. B. C. counts and hematocrit determinations were made at various intervals. It was found that about two-fifths of the increase in red cells could be referred to a tonic contraction of the spleen and the remaining three fifth to the production of red blood cells by the bone marrow.

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**Focal Destruction of Nervous Tissue by Focussed Ultrasound** by Ballartire, Jr, H. T. ; Hueter, T. F. ; Nanta, W. J. H. ; and Sosa, D. M. (1956) : *Expt. Med.*, 104, 337.

The authors describe a device to focus ultrasound at frequencies of 1.0 m. cps and 2.5 m.cps by suitable lens system to produce a small region of high vibrational intensity. The concentrated energy within and around the focal region has been used by them to destroy structures of the C. N. S.