36. Pharmacological Studies on Various Benzothiazol Derivatives.

Relation between Physiological Action and Chemical Constitution. (II)

Hajime Fujimura.

The relation between chemical structure and action of various benzothiazol derivatives as regards their toxicity and local anesthetic actions as well as that on the smooth muscles have already been reported by auther's forgoing report (Folia Pharmacol. Jap. 44, 6§ 1949).

In the previous experiments it was pointed out that many local anesthetics potentiate the action of some hypnotics and analgesics.

In this report the potentiatig effect of the benzothiazole compounds on the hypnotic action of evipan and the analgesic action of morphin was investigated, especially under the consideration of the actionstructure relationship.

Drugs examined: A: 2-Aminobenzothiazol, B: 2-Amino-6-methoxybenzothiazol, C: 2-Amino-6-ethoxy-benzothiazol, D: 2-Amino-6-isoproxybenzothiazol, E: 2-(β-Diethylaminoethylamino)-6-methoxy-benzothiazol, F: 2-(β-Diethyaminoethylamino) -6-ethoxy-benzothiazol.

The mean duration of hypnotic action of evipan (50 mg/kg i. p.) was 30 minutes in mice. All the benzothiazol derivatives above mentioned, by injection (20 mg/kg s. c.) 15 minutes previous to evipan, prolonged the duration of evipan action. The percentage prolongation by combired use of derivatives A, B, C, D, E and F are about 50, 150, 200, 500, 17 and 17 respectively.

By means of Haffner's method in mice, all the above mentioned derivaties (20 mg/kg s. c.) did not potentiate the morphin action (5 mg/kg s. c.). B, C and D potentiate the morphin action in additional combination of benadrin (10 mg/kg s. c.), while A, E and F not.

From above results, the presence of alkoxyl radical in 6-position of benzothiazol ring seems to play an important role in potentiating tne hypnotic action of evipan as well as the analgesic action of morphin, while further substitution of H of amino radical in 2-position by diethylaminoethyl may result in the inhibition of the action of both drugs.