Intestinal Absorption, Organ Distribution and Histological Localization of the ^{3}H-Distigmine Bromide in Rats

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Distigmine bromide is known as the cholinesterase inhibitor and very effectively used to treat myasthenia gravis patients. Recently this agent is applied to the patients with atonic constipation and gained 70 percent or more of recovery rate.

We studied with tritium labelled distigmine bromide; the intestinal absorption rate, the distribution in the organs and then the localization of this agent in the colon by autoradiographic method.

In the experiment, we used rats and mice and in order to study the absorption, the agent is administered per os and organ distribution intramuscularly.

The animals are killed at 10, 20, 30, 60 and 120 minutes of the administration.

The organ distribution is investigated on the brain, lung, heart, liver, kidneys, spleen, stomach and large and small intestines.

The absorption rate already reaches to 60–70 percent of the absorbed dosis in 10 minutes after oral administration of ^{3}H-distigmine bromide and thereafter the rate is gradually increased to about 80 percent in two hours after administration.

The organ distribution is prominent in the liver (about 5% of absorbed dosis), in the other organs there are only about one percent of accumulation after one hour.

Studying by autoradiographic method we found the silver grains mostly in the muscular layer without the Auerbach's plexus and smaller amounts in the epithelial layer.

These findings agree with the report that specific cholinesterase is not stained histochemically in the Auerbach's plexus and stained in the nerve fivers.

Quantitative Measurement of Fecal Blood Loss by ^{51}Cr Method without Using Mixer

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It is generally accepted that measurment for fecal blood loss by ^{51}Cr is the most reliable to measure the gastrointestinal bleeding in the feces. However, this method has not been commonly used for a routin examination, probably because the method needs to homogenize the feces by mixer.

For the first time, the measuring error was checked when homogenization was avoided from the usual method. A well type scintillation counter ($\phi 1.75 \times 2$ inch cristal) and a universal gamma counter with two detectors ($\phi 5 \times 2$ inch) were used to radioassy the blood in the entire stool specimen. The three specimens of phantom fecal mass of 50g, 100g and 300g were checked by one handred milliliters ^{51}Cr standard solution. The error of measurment was with 40% of the standard value in the well type counter and 8% in the universal gamma counter. The physical blood loss was investigated in 8 healthy volunteers, using ^{51}Cr 100–125 μCi. All feces collected in