I. Gastrointestinal Tract, Liver, Biliary Tract and Pancreas

The Experimental Study on the Permeability of the Oral Mucosa with $^{24}$Na.

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The basic study was done on the permeability of the oral mucosa in order to use clinically in future.

Mucous membranes of rabbits were studied with radioactive isotope technic. After pouring 20 $\mu$Ci of $^{24}$NaCl solution into the standard area of the oral mucosa, $^{24}$Na activity in blood per 1 ml was measured by scintillation counter.

The results of basic studies are as follows:

1. $^{24}$Na was transported through the lingodorsal mucosa, and radioactivity in blood constantly increased for 60 minutes after dropping $^{24}$NaCl solution.

2. In microautoradiograms of lingal tissue, $^{24}$Na particles were found in submucous connective tissue through keratinized mucous membrane, as early as 5 minutes after application of $^{24}$NaCl solution.

3. According to these results, the permeability of $^{24}$Na on the oral mucosa was analysed quantitatively from the blood.

The absorption rates in five sites of oral mucosa were as follows; Buccal: Palatinal: Oral floor: Lingo-dorsal: Lingo-ventral = 2.4: 1.4: 1: 0.9.

4. The rates of permeability through the lingodorsal mucosa were in proportion to these followed concentrations of 1, 10 and 20% NaCl solution.

5. The permeabilities of the oral mucosa were accelerated higher by hyaluronidase or polysorbate (Tween 20) and these two medicines were similar to each other in the effect.

6. In the relationship of permeability the buccal mucosa was almost the same as in the case of the lingal mucosa.

According to above results, it may be useful for the clinical diagnosis of disturbances of oral mucosa.

Evaluation of the Salivary Gland Scanning with $^{99m}$Tc-pertechnetate

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A study on salivary gland scanning with $^{99m}$Tc-pertechnetate ($^{99m}$TcO$_4^-$) was made in order to evaluate salivary gland diseases and space occupying lesions in or near salivary gland. Apparatus used in this study was Shimadzu-made-scintiscanner with 2" NaI crystal and 10 or 5cm focusing honeycomb collimator, and dot-recording system was applied.

In every adult patient, 5mCi of $^{99m}$TcO$_4^-$ was injected intravenously 10 minutes prior to scanning.