

Our knowledge is still defective as to the exact influence on this secretion of the various constituents of the food. Fats appear to have a marked effect in increasing the amount of bile secreted and also the amount of fat excreted in the bile. Rosenberg (12) has shown that the influence of the fats in stimulating the secretion of bile is much more distinct than that of either proteids or carbohydrates. Barbara (13) in a recent paper has stated that the excretion of bile after a meal of proteids or carbohydrates, runs parallel with the excretion of urea, while after a meal of fats, bile secretion increases out of proportion to the urea; and Albu (14) says that in a woman with biliary fistula he found that a diet consisting of eggs, soups, white meat, vegetables and fruit, caused a more abundant outflow than one in which meat figured largely.

The secretion of bile is also influenced by the amount of fluid taken, but there is no mechanical filtration such as exists in the kidneys, as the bile is excreted at a pressure several times higher than that in the portal vein. The amount of water excreted is, therefore, dependent on the activity of the liver cells and not on the water in the blood. At the same time, it has been observed that in the case of a woman with a biliary fistula, the amount of bile excreted was greater upon the days on which a large amount of fluid was taken, and that this increase was in the quantity of the water and not of the biliary salts.

The determination of the influence of drugs on the biliary secretion has been beset with many difficulties; and even in the case of the few which apparently stimulate this secretion, it is difficult to be sure of the exact part played by the liver cell itself and by the expelling apparatus, and of the effect produced by the action of tissues outside the liver, such as the intestinal glands and mucosa. Careful experiments, however, have been recently made in cases of accidental biliary fistulæ, and the effect of drugs carefully observed.

The more important drugs which have been found to increase the flow of bile are: turpentine, salol, sodium salicylate, sodium benzoate, and euonymin, but no drugs stimulate the flow so powerfully as do the bile salts, the glycocholate and taurocholate of soda. The action of sodium bicarbonate, sodium chloride, sodium sulphate, Karlsbad salts, aloes, rhubarb and ipecac, is so slight as almost to amount to nil; while calomel, strychnine, and potassium iodide rather diminish the flow.

A recent investigator has questioned the existence of any drugs directly influencing biliary secretion. But this, I think, is carrying scepticism too far; we know that the bile salts will stimulate the flow; similarly, but to a less extent, that sodium salicylate will increase the flow, and Rosenberg claims a direct cholagogic action for olive oil, which, in his hands, next to the bile salts, was the most efficient stimulant of the biliary secretion.