A SUBSTITUTE FOR BILE SALTS FOR ADMINISTRATION WITH SUBSTANCES POSSESSING VITAMIN K ACTIVITY

Sirs:

It is generally accepted that vitamin K and substances possessing vitamin K activity are absorbed from the gastrointestinal tract only in the presence of bile or bile salts. It occurred to us that the value of bile salts in this instance may be due to their non-specific factor of high surface activity. Search for a nontoxic highly surface-active substance, to test this theory, led to the selection of dioctyl sodium sulfosuccinate.

Two batches of capsules were prepared, one batch containing, dissolved in oil, 25 mg. of 2-methyl-1,4-naphthoquinone in each capsule, and the other containing the same amount of the quinone and in addition 60 mg. of dioctyl sodium sulfosuccinate. In each of three cases with prolonged prothrombin times studied to date, the clotting activity in per cent of normal was determined (1) before medication, (2) 48 hours after therapy with 2-methyl-1,4-naphthoquinone (25 mg., three times in 24 hours for 2 days) was begun, and (3) 48 hours after therapy with 2-methyl-1,4-naphthoquinone and dioctyl sodium sulfosuccinate (25 mg. of 2-methyl-1,4-naphthoquinone and 60 mg. of dioctyl sodium sulfosuccinate, three times in 24 hours for 2 days) was begun. In each case the prothrombin time failed to decrease except after treatment with the 2-methyl-1,4-naphthoquinone-dioctyl sodium sulfosuccinate combination.

The observations are indeed few but the uniformity of the results is such as to lead us to record them at this time. Other cases are being studied as they present themselves.

Further consideration arises as to what role such surface-active substances may play in fat transport generally.

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