H. Endocrine (Except thyroid) Metabolism

The Effect of Bucolome on the Biliary Excretion of Colchicine in the Rat

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The biliary excretion of an i v injected colchicine was compared for 2 hrs between control and bucolome (BC) administered rats (20 mg/100 g, ip, 40 min previously) . . . using ^{14}C-colchicine as a tracer. The biliary excretioh of ^{14}C radioactivity (colchicine dose 70 μg/100g) in the first 10 min post injection and for 2 hr was 11.5±2.2, 35.2± 2.9 (percent of the dose, mean ±SD) in control rats (n=14), while it was significantly increased in BC administered rats (17.4±3.5, 40.7±4.9, n=12). Almost identical values were obtained in studies using a colchicine dose of 7 μg/100g again showing the enhancement of colchicine excretion by BC. Using radio TLC (solvent, benzene, diethylamine ethylacetate, methanol, 5:1:4:1) three major peaks were separated among which the fraction of free colchicine was a major component (more than 90 percent). In BC administered rats, free colchicine fraction was significantly increased in the first 10 min bile sample compared with control value, which contributed to the significant increase in the total bile activity, while the other two metabolites fraction including desmethylcolchicine and its glucuronide conjgates were significantly lower in the bile obtained from BC administered rats. It was concluded that bucolome can enhance the biliary excretion of free bucolome, while it inhibits the biliary excretion of metabolic products. administration (IP versus Oral) and preparation (SP versus A) produced significant differences, the value in IP-EG-SP group being the lowest. In the study using a lower nercury dose(30 μg/100 g) the biliary excretion of mercury was also significantly higher in treated groups (IP-PG-SP, 4.87±0.84, IP-EG-SP 5.93±0.59) compared with the control value (1.27±0.59), but the effect of SP pretreatment was one half of that in a higher mercury dose study. The discrepancy in the past reports on the enhancing effect of SP might partly be due to the different mercury dose used. The difference in preparation of SP and administration does not cause a difference in the effect of the biliary excretion of mercury but clearly produces a difference in the renal mercury accumulation.

The Role of Canalicular Bile on the Biliary Excretion of Cardiac Glycocides (Ouabain and Digitoxin) in the Rat

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The role of canalicular bile on the biliary excretion of cardiac glycosides has not been established. The authors compared the effects of canalicular choleresis of two different choleretics (taurocholate, TC, and bucolome BC) on the biliary excretion of ouabain (Ob) and digitoxin (Dt) using ^{3}H-labled glycosides as respective tracers. Seven to 8 week old SPF SD male rats were studied under nembutal anesthesia for 40 min (ouabain) or 2 hr (digitoxin) by continuous bile collection with appropriate time intervals. BC was given 40 minprior to excretion study (20 mg/100 g, ip). TC was continuously infused (0.6 μmol/100 g/min) and the excretion study was started 20 to 30 min after the start of TC infusion.

Results. In both BC and TC administered rat groups, bile flow rate was significantly increased by 30 to 50 % for the observation peirod. The 40 min biliary excretion of Ob (0.4 mg per 100g) was significantly higher in BC (65.2±5.8% of the dose, mean ±SD,n=5) and TC (58.8±4.9, n=5) rats compared with control rats (52.3±4.9,

n=5), which was due to a marked increase of excretion in the first 10 min period (BC 39.3±0.31, TC 32.8±5.56, control 27.16±3.71). Dt (dose 0.18 mg/100g) excretion for 2 hr on the other hand was not significantly changed in choleretic rat groups compared with control rats (BC 23.9±5.9, TC 29.30±5.1, control 25.7±3.4). It is suggested that the canalicular choleresis produced either by BC or TC can increase the biliary excretion of Ob, while it is ineffective for the biliary excretion of Dt.