I. INTRODUCTION

The relation between cystinuria and uric acid lithiasis, though already known for a long time (8,1), recently finds new attention in the concerning literature (5) caused by the increasing observations of primary hyperuricaemia and simultaneous cystinuria. This relation was pointed out by Meloni and Canary in 1967 (6). They supposed the presence of two inheritable metabolic deficiencies, but they could not precise a possible relation between both of them. The hyperuricaemia was however not the consequence of a renal damage by cystinuria. Three years later Vergis and Walker (9) described a case of a 19-year-old woman with cystinuria coincident with hyperuricaemia. But in fail of renal function analysis a renal caused increase of uric acid cannot be excluded. More patients with cystinuria and hyperuricaemia have been observed by King and Wainer (3) and by Krizek (4). Details of these cases are described in a clear way by Newcombe (7), who concludes, that the reported cases suggest a possible relationship between cystinuria and hyperuricaemia. Marketos, S. et al. (5) examined 5 patients with primary hyperuricaemia, cystinuria and urolithiasis. They found it proved, that people with cystine calculi show an increased excretion of uric acid and also tend to disturbed urate homeostasis. Hyperuricaemia caused by renal disfunction could be excluded in this case by normal glomerular filtration rates. The authors therefore suggest, that these disturbances are caused by one or two inborn errors of metabolism. Our own examinations treated the comparative measurement of actual uric acid and cystine concentrations in the urine of idiopathic calcium oxalate stone-formers and healthy controls. They do therefore not follow
exactly the above reported cases of people suffering from cystinuria, but a rather important correlation between our cystine and uric acid values urged us to present our results in association with the above mentioned facts.

2. PATIENTS AND CONTROLS

Ten recurrent oxalate stone-formers we compared with eleven healthy controls. Three of the patients and four of the controls were women. Each of the parameters in question were measured over a period of 4 - 5 weeks. Taking into consideration that stone-patients get their repeated stone-recurrences not under a special diet, but under their individual habits, we didn't prescribe them any uniform diet. The patients and the controls collected their urine thrice a day (morning, midday, evening) in special plastic containers, with 15% thymol/propanol respectively toluol as preserver.

3. METHODS

The determination of cystine was carried out following a modified method of Shinohara and Padis (2). Cystine is reduced by sodium bisulfite to cysteine; in addition, the sulfhydryl-group of cysteine changes the added phosphotungstic acid to the tungstic blue which can be evaluated (spectro)photometrically. The normal cystin excretion is 10 - 100 mg/die. Our results were related to a cystine standard of 400 mg/l. The uric acid was determined by the Boehringer test-combination (Boehringer/Mannheim, Art.15 865/15 866). The actual urinary concentrations of cystine and uric acid were the basis for the calculation of the linear regression curves and the coefficients of correlation. The daily mean value was calculated from the average daily concentration of all patients and controls and not from the mean value of the morning, midday and evening urine, which may explain the small numeric difference.

4. RESULTS AND DISCUSSION

As it can be seen in Table 1 and Table 2, the (uncorrected) concentrations (not 24-h-excretions) of cystine and uric acid were lower in the group of stone-formers than in that of control persons. The consideration of the equally lower urine osmolarity of patients however compensated this difference so that no significant differences between patients and controls could be ascertained. The calculation of the linear regression curve showed for the patients the equation: cystine = 0,067 x uric acid + 14,7, for the controls: cystine = 0,065 x uric acid + 18,7. The curves are - in virtue of the nearly identic slope - very similar in their course (Fig. 1). The patients' values showed a highly significant positive correlation with r = 0,68 (P<0,001),