The thesis deals with a pathology chapter which has known an important progress during the last two decades, thanks to the echography – as a diagnosis method – and to the extracorporeal lithotrity – as a therapy method. More specifically it’s the urinary lithiasis which seems to be more and more frequent in children, having in addition some characteristic features.

The thesis has 254 pages and it’s made up of two parts: the general part and the special part (personal study). The first part presents the up-to-date information from literature concerning the urinary lithiasis in children. In the second part, the author presents in 5 chapters the results of her own research gathered from the 147 cases of urinary lithiasis diagnosed in children admitted to the hospital in the Pediatrics II and III Clinics from Tg-Mures, for the period of 10 years (1996-2005). Within the pathology of the renal-urinary system analyzed in the respective clinics during the above mentioned period, the urinary lithiasis was ranked fourth, at an appreciable distance from the urinary infections, the congenital malformation and the urethral-bladder reflux.

Depending on age, the maximum frequency of the urinary lithiasis was encountered between 10 and 15 years of age, boys representing 61.2% of all cases. Within the risk factors there are the obstructive congenital malformations of the urinary tract, followed by the urinary infections with proteolytic germs, the disorders of calcium metabolism and the heredity. Among the clinical and laboratory signs which marked the beginning of the disease, hematuria was, by far, the most frequent (in 84.3% of cases), followed by abdominal or lumbar pain (in 57.8% of children), nausea and vomiting (47.6%) and fever (30.7% of cases). In 65.3% of children, the lithiasis was pyelocaliceal, in 28.5% urethral and in 6.2% vesical. The chemical structure of the calculi was mostly calcium-containing: calcium oxalate in 73.7% of cases, calcium phosphate in 10% and oxalate plus calcium phosphate in 3.7% of cases. Among the non-calcium-containing calculi, the most numerous ones (11.3%) were represented by the phosphate-ammonia-magnesium type, there was only one case of cysteine calculi. Among the
complications, there were 24 of cases of hydronephrosis and urethra-hydronephrosis.

In 33.3% of cases there was a spontaneous elimination of the calculi while in 45.4% of children an extracorporeal lithotripsy was performed.

A separate chapter deals with the lithiasis of a metabolic origin, regarding 8 children with diseases or syndromes that evolved with hypercalcemia and/or hypercalciuria, who have been diagnosed with nephrocalcinosis or renal-urinary lithiasis of calcium type: one case of primary hyperparathyroidism, another one of secondary hyperparathyroidism, one case of chronic tubular acidosis, three cases of vitamin D intoxication and two cases of post-cortisone lithiasis.

Since in the clinical part, the association between the urinary lithiasis and the urinary infection is frequent, another chapter of personal research refers to 58 cases where this particular association was encountered (39.5% from the children with lithiasis studied). In 90% of the cases the urinary infection was an acute pyelonephritis and in 20.7% with proteolytic germs. The evolution of the infection was relapsing in 39.65 of cases and in 6.8% the lithiasis relapsed as well.

Due to the fact that in sucklings the urinary lithiasis is quite rare and less studied, the doctorand studied 7 cases of sucklings with lithiasis, two from the first semester of life and four boys. Three sucklings had a record of severe diarrheal disorders; four of them had relapsing urinary infections while three had congenital malformations of the urinary system. In three of the cases the location of the calculi was vesical. The violent abdominal colics have dominated the clinical symptoms and two sucklings had hematuria too. A series of connections has been established between the type of feeding, cow milk excess after diversification and vitamin D overdosage.

Given the fact that the role of heredity is more and more mentioned in the urinary lithiasis, the influence that the membership to a blood group might have in the outbreak of this disease in children was studied too.

Thus, it was established that 46.1% of the 147 studied children with lithiasis had A (II) blood type, which could be considered a potential risk factor together with other well-known factors: case history of lithiasis in the family,
obesity, a certain metabolic status, relapsing urinary infections or a certain etiology (proteolytic germs), and so on.

By synthesizing the main specific features of urinary lithiasis, as it appears in the present study, one could draw the following conclusions:

- the incidence of the urinary lithiasis in children is less frequent that in adults, but seemingly it’s increasing;
- its presence manifests in all childhood stages, including in sucklings;
- calcium lithiasis is relatively less common in childhood, less frequent being the lithiasis originating from other metabolic diseases (those of urates, oxalates or abnormalities of the amino acids tubular transfer);
- in exchange, the incidence of nephrocalcinosis cases is increasing;
- the clinical symptomatology is uncharacteristic, often deceiving, sometimes there is an absence of any clinical sign over a long period of time (remarkable latency);
- the evolution is usually relapsing in children with metabolic lithiasis, if the respective metabolic disease hasn’t been traced out.
- delaying the diagnosis due to the absence of obvious or suggestive clinical signs in more than half of the children with urinary lithiasis may have serious consequences as regards the renal functionality;
- nowadays there are more possibilities diagnosis-wise thanks to the echography as a first choice at any age of a child suspected of urinary lithiasis as well as treatment-wise thanks mostly to the extracorporeal lithotritry and to other modern methods which are part of the “non-bleeding” surgery.