NEITHER CLINICAL NOR BIOLOGICAL DATA CAN PREDICT RENAL INVOLVEMENT IN INFANTS WITH FEBRILE URINARY TRACT INFECTION

Submitted by Nikoleta Printza
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INTRODUCTION: 99m Tc-dimercaptosuccinic acid (DMSA) scintigraphy is accepted as the gold standard in the diagnosis of acute pyelonephritis.
OBJECTIVE: In an attempt to reduce the number of investigations after urinary tract infections (UTIs), with this prospective study we aimed to evaluate the diagnostic value of acute-phase reactants in identifying renal involvement in infants with febrile UTI.
METHODS: Fifty-four infants (36 male, 18 female) aged 1 to 12 months were studied. For all infants, clinical findings such as duration and height of fever before antibiotic administration and laboratory parameters such as leukocytosis (white blood cell count of >15.000/μL), elevated erythrocyte sedimentation rate (ESR) (>20 mm/hour), and high levels of C-reactive protein (>10 mg/mL) were compared with the results of the DMSA scan obtained within 72 hours after referral.
RESULTS: Regarding microbial agents, *Escherichia coli* was identified in 42 (78%) of the 54 infants, and 16 (29.5%) of the 54 of infants were febrile for >2 days before diagnosis of UTI. Leukocytosis, elevated ESR, and high levels of C-reactive protein were present in 14 (26%), 41 (76%), and 38 (70%) infants, respectively. Acute-phase DMSA showed renal involvement in 10 (18.5%) infants. Vesicoureteral reflux was found in 16 (29.5%) infants. Gender, duration of fever before antibiotic administration, leukocytosis, elevated ESR, and high levels of C-reactive protein were not related to the severity of renal damage, as shown by DMSA. Only fever of >39°C was slightly correlated with an abnormal DMSA scan result ($r = 0.3$; $P = .032$).
CONCLUSIONS: Acute-phase DMSA scintigraphy remains superior to clinical and laboratory data for predicting renal involvement in infants with febrile UTIs.

IMMUNE FINDINGS IN CHILDREN WITH IDIOPATHIC NEPHROTIC SYNDROME: COULD THEY PREDICT THE RESPONSE TO STEROID THERAPY?

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INTRODUCTION: Nephrotic syndrome (NS) is thought to be associated with primary immune disturbances.
OBJECTIVE: The aim of our study was to investigate prospectively the immune disturbances in steroid-sensitive (SS) and steroid-resistant (SR) NS and identify whether these immune disturbances may predict the response to steroid therapy.
METHODS: Thirty children with SS NS and 7 children with SR NS (aged 2 to 14 years) were studied. To evaluate the possible relationship between immune disturbances and response to treatment, patients were evaluated during different disease stages. Data were compared with those obtained from 25 age-matched controls. The following parameters were assessed: basic B- and T-cell populations, percentages of $CD23^+$, $CD3^+/CD69^+$/interferon γ^+ (IFN-γ^+) cells, and $CD3^+/CD69^+$/interleukin 4^+ (IL-4^+) T cells, and serum levels of IL-13 and IL-18.
RESULTS: In patients with SS NS percentages of $CD23^+$ and $CD19^+$ B cells, $CD3^+/CD69^+$/IL-4^+ T cells and serum levels of IL-13, IL-18 were significantly higher in the active stage compared with the remission stage on steroids, remission off steroids, and controls ($P < .05$). On the contrary, percentages of $CD3^+/CD69^+$/IFN-γ^+ T cells were significantly decreased ($P < .05$). In patients with SR NS, percentages of $CD23^+$B cells, $CD3^+/CD69^+$/IL-4^+ T cells, and serum levels of IL-13 and IL-18 presented no significant difference between active stage and partial remission. Percentages of $CD19^+$ B cells and $CD3^+/CD69^+$/IFN-γ^+ T cells were elevated in active stage compared with remission stage of patients with SR NS and in controls ($P < .05$).
CONCLUSIONS: These findings suggest that when a type-2 immune response is found in the active stage of NS, one could predict a good response to steroid therapy.

RENAL INVOLVEMENT IN CHILDREN WITH GLYCOGEN-STORAGE DISEASE

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INTRODUCTION: Long-term complications of glycogen-storage diseases (GSDs) include delayed puberty, hepatic adenomata, and renal disease.
OBJECTIVE: In this study, our aim was to detect renal involvement in children with GSD and to determine the most accurate laboratory test to be the gold standard for early detection of this renal dysfunction.

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