38.5 ± 3.7 years and BMI 31 ± 1.2 kg/m^2. Fifty male obese adults with impaired glucose metabolism were also recruited for comparison (mean age 42.2 ± 2.8 years). *Table* I compares the recruited boys and adults for various biochemical markers. Fasting blood sugar, lipids, insulin, insulin resistance (IR) as HOMA-IR, HDL-C, NO^x, and adiponectin differed significantly between cases and controls, both for the boys and adults.

Correlation of either adiponetin or sE-selectin with selected anthropometric, biochemical, and clinical parameters in the studied groups was negative and positive, respectively, for boys in the case as well as in the control groups. Negative correlation between adiponectin and BMI demonstrated in our study, has been observed previously [1]. Since, NO inhibits leukocyte adhesion and rolling as well as cytokine-induced expression of MCP-1, its level correlated negatively with hyperglycemia, dyslipidemia, and inflam-mation. The abundance of MCP-1 in blood is increased in obese subjects, suggesting that MCP-1 might be an adipokine whose expression is increased in obesity [2].

Our results demonstrated an elevated level of MCP-1 and sE-selectin in newly diagnosed T2DM obese boys, where both are considered as amplifiers of the inflammatory cascade, and moreover, both showed an inverse correlation with adiponectin. Winer, *et al.* [3] reported that adiponectin may function as a biomarker of the metabolic syndrome (MetS) in childhood obesity because of its strong correlation with several indices of IR. Similarly, Gilardini, *et al.* [4] reported that hypoadiponec-tinemia may be associated with a high risk for the MetS. Another explanation was provided by Rosa, *et al.* [5] who reported that infiltration of inflammatory cells may represent the critical step in adipose tissue-associated inflammation, although the initial trigger(s) for accumulation of these cells remains elusive. The present study extends the existing knowledge about alterations in the pro-inflammatory cytokines family in obese adults to obese children. It also supports the widely accepted theory that low adiponectin levels promote the production of adhesion molecule(s) (namely sE-selectin) in ECs [6].

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Gram Stain as a Predictor of Urinary Infections in Children under 2 years

During early life, clinical manifestations of urinary tract infection (UTI) are nonspecific and definitive diagnosis through urine culture is often late. It is essential to have rapid and reliable diagnostic tests to guide initial treatment. We compared the diagnostic effectiveness of the urine dipstick, urine sediment, and Gram stain in infants with suspected UTI.

This was a retrospective study conducted by reviewing medical records of patients admitted to the pediatric emergency service during the past five years. We included patients aged up to 24 months with symptoms suggestive of UTI, in which a urine sample was obtained by bladder catheterization to perform urine dipstick, urine sediment, gram stain and urine culture. The presence of leukocyte esterase and nitrites of 1+ or greater by dipstick were considered positive. Leukocyturia was defined as >10 leukocytes per high power field in centrifuged urine; and

bacteriuria as the microscopic visualization of any number of bacteria. Gram stain positivity was defined as the isolation of more than 1 bacteria per high power field of any organism in centrifuged fresh urine. The results of these tests were compared with the urine culture as gold standard (positive if >10,000 cfu/mL of a single pathogen). We determined the sensitivity, specificity, positive and negative predictive value, for each of the parameters analyzed. We also compared the results of Gram stain by stratifying patients according to age group (≤3 months and >3 months).

During the 5-year study period, 980 patients met inclusion criteria; 430 were girls and mean age was 6 months. Urine culture was positive in 558 cases. Urine dipstick showed leukocyte esterase to be the most sensitive parameter, although nitrites were the most specific (*Table* **I**). Similar values were found for the presence of leukocytes and bacteria in the urinary sediment. Gram stain showed the highest diagnostic effectiveness. There were no differences of the value of gram stain in those below and above 3 months of age.

Screening tests are essential to guide diagnosis and initial treatment of UTI in children until the results of urine cultures become available [1,2]. Urine dipstick has been reported to have lower sensitivity in incontinent children, as decreased nitrite production and a less intense inflammatory response due to more frequent urination [3]. This is confirmed in our series. While urine dipstick is a fast and affordable method for initial diagnosis in the emergency department [4], its sensitivity was 80%. Similarly the diagnostic utility of urine sediment was also limited. In contrast, gram stain provided a higher sensitivity and specificity applicable not only to children under 3 months but extendable to 24 months, and was thus a reliable guide for initial antibiotic treatment [5].

Our results show that gram stain was the diagnostic tests of choice for decision making in infants with suspected UTI until the results of urine culture are available.

TABLE I UTILITY OF SCREENING TESTS FOR DIAGNOSIS OF URINARY TRACT INFECTION

	S (%)	Sp (%)	PPV (%)	NPV (%)
Urine dipstick				
Leukocyte esterase	76	84	86	73
Nitrites	31	99	97	53
Leukocyte esterase and Nitritess	26	99	42	51
Normal	80	83	86	77
Urine sediment				
Leukocyturia	75	84	86	72
Bacteriuria	42	71	94	56
Leukocyturia and bacteriuria	38	98	96	55
Normal	79	83	85	75
Gram stain	83	97	97	82

S: sensitivity; Sp: Specificity; PPV: Positive predictive value; NPV: Negative predictive value.

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