Short Oral Antibiotic Therapy for Pediatric Febrile Urinary Tract Infections: A Randomized Trial

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In this multicenter randomized controlled trial (STOP Trial), the authors compared if 5 days antibiotic course is non-inferior to 10 days course in well-appearing children with acute febrile urinary tract infection (UTI). Children aged 3 months to 5 years with fever (temperature >38°C) with/without urinary symptoms, positive urinary dipstick for nitrite and/or leukocyte esterase and positive urine culture (single bacteria with ≥10⁴ CFU/mL by catheterization or ≥10³ CFU/mL by midstream clean catch) were enrolled while those with fever persisting more than 48 hours after commencing treatment and/or need to change the antibiotic, dehydration, vomiting, presence of a urinary catheter, antibiotic treatment during the previous 15 days or immunodeficiency were excluded. The authors chose a commonly used antibiotic, amoxicillin-clavulanate, at 50 mg/kg/day in 3 divided doses and compared if a 5-day course had higher recurrence of UTI within the next 30 days when compared to 10-day course and also compared the antibiotic resistance between the two groups. The trial was stopped at the 2-year pre-specified interim analysis as the criteria for non-inferiority was met i.e. recurrence rate of UTI within 30 days was within the 5% non-inferiority limit in the short-course group. Only one child in the short-course group required further antibiotic therapy for managing UTI recurrence. There was no significant difference in the adverse events between the groups nor any statistically significant increase in antibiotic resistance in the short-course group. The results suggest that a 5-day course of amoxicillin-clavulanate is good enough for well-appearing children with acute febrile UTI.


The studies have identified that dosing the extrinsically administered steroids in syrchnogy with the early morning internal cortisol surge may be associated with lesser hypothalamic-pituitary-adrenal (HPA) axis suppression which in turn may be associated with fewer relapses. To this end, Khan et al undertook a single-center open-label randomized trial to evaluate if giving the 6-weeks daily prednisolone therapy as a single dose in the early morning (between 6-9 AM) was better than the commonly prescribed two divided doses (first dose before 9 AM and second dose after 8 PM) for children presenting with the first episode of nephrotic syndrome. Post-completion of 6 weeks of daily therapy, study patients underwent the Short Synacthen Test involving intramuscular administration of a single dose of synthetic ACTH and assessment of the serum cortisol levels within 60 min of this injection. Patients with stimulated cortisol level < 18 mcg/dL were considered to have HPA axis suppression. As expected, patients in the divided dose group had greater HPA axis suppression than the single dose group. However, time to remission and total relapse rates were similar in both the groups. Nevertheless, in those who relapsed, the time to relapse was significantly shorter in the divided dose group (28 vs. 131 days). The authors concluded that giving prednisolone as a single morning dose has less HPA axis suppression and longer time to first relapse.

Short-Course Therapy for Urinary Tract Infections in Children: The SCOUT Randomized Clinical Trial

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This randomized noninferiority trial was conducted over 7-years at two children’s hospitals in the United States of America. Children aged 2 months to 10 years with UTI exhibiting clinical improvement after 5 days of antimicrobials were randomized to receive either placebo (short-course therapy) or antibiotics for another 5 days (standard-course therapy). Treatment failure, defined as symptomatic UTI at or before days 11-14 (first follow-up visit), was the primary outcome; while UTI after the first follow-up visit, asymptomatic bacteriuria, positive urine culture, and antibiotic resistance were the secondary outcomes. Treatment failure was 7-fold higher in the short-course therapy group. However, when we look at the results closely, only 14 out of the 336 (4.2%) children assigned to short-course therapy developed symptomatic UTI suggesting that this short-course therapy may not lead to treatment failure in the vast majority. Therefore, the authors suggested that short-course therapy could be a reasonable option for children who have clinical improvement after 5 days of antibiotics.

An open label non-inferiority randomized control trial evaluated alternate day prednisolone given daily during infections vs. levamisole in frequently relapsing nephrotic syndrome

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For patients with a low-threshold frequently relapsing nephrotic syndrome (FRNS), low dose alternate day prednisolone (LTAD) and levamisole are the commonly preferred treatment options. In this single-center, non-inferiority trial, patients with FRNS were randomly assigned to receive either low dose prednisolone (0.5-0.7 mg/kg alternate day and made daily during infections) or levamisole (2-2.5 mg/kg alternate day) and evaluated to see the proportion of patients with frequent relapses during the 1-year trial period. The study identified more patients in the LTAD group to have frequent relapses compared to the levamisole group (risk difference 17.5%). However, there were similar proportion of patients in sustained remission and a significant decline in prednisolone requirement from baseline in both the groups. Overall, while both the agents are effective first-line medications for low-threshold FRNS patients, levamisole may be preferred in patients at risk of steroid toxicity.

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