Evolution of Non-Severe Acute Lower Respiratory Tract Infection

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In this issue of *Indian Pediatrics*, the study by Fountoura, *et al*. [1] compares the evolution of symptoms and signs among children with non-severe lower respiratory tract infection, with and without radiological pneumonia. The authors conclude that persistence of fever or tachypnea up to the second day of amoxicillin treatment is predictive of radiographically diagnosed pneumonia among children with non-severe lower respiratory tract disease. The sincere attempt of the authors in finding out clinical predictors of radiologically diagnosed pneumonia is appreciated.

However, there are a few ambiguities in the diagnosis of non-severe lower respiratory infection, *viz*., the inclusion and exclusion criteria and the radiological diagnostic criteria. Cases with consolidation and pleural effusion, atelectasis, hyperventilation on chest radiograph; clinical findings of difficulty in breathing (68%), vomiting (47.6%), wheezing (29.8%), chest retraction (2.69%), inability to drink (8.8%; 6.8 % among pneumonia and 2.0 % among children with normal chest radiograph) were also observed in children who were considered as "non-severe LRI", which is unacceptable. On recruitment, pneumonia was said to be defined by the respiratory complaints, lower respiratory tract findings, and radiographic presence of pulmonary infiltrates at admission read by pediatrician on duty. This does not explain the fact that a significant proportion of chest radiographs (40.9%), were found to be normal!

There are a few controversies also observed in this study. Without attempting to identify the exact etiology of pneumonia, amoxicillin was administered. This we presume would have been given orally. With 45.8% of children having vomiting, its effectiveness is also questionable. Good response to therapy could be due to the fact that most of the LRI in this series may have been due to viruses, which is also evidenced by normal chest X-ray in 40.9% of cases where antibiotics may not have any role. The exact results of clinical effectiveness of amoxicillin in community acquired pneumonia in their set-up should have been mentioned, which has a bearing on the evolution of symptoms and signs. When the WHO recommendation is 3-5 days of antibiotic therapy for non severe pneumonia [2], unwarranted administration for 10 days can lead to related adverse events, escalation of cost and emergence of drug-resistance.

Since the study aims to study the evolution of symptoms and signs among radiologically diagnosed pneumonia compared to those who had normal radiograph, recruiting cases with full blown picture of pneumonia plus pulmonary infiltrates on radiograph is not ideal. The "inception cohort" should have been assembled with suspected cases of pneumonia very early in the course, *i.e.* from the 1st day of illness itself and followed up for evolution of symptoms and signs. The outcome of this study, namely the persistence of fever or tachypnea up to the 2nd day of amoxicillin treatment predicting radiographically diagnosed pneumonia among non-severe lower respiratory tract infections does not help, as we are interested in symptoms or signs which could predict the indications for radiograph in a case of non-severe lower respiratory tract when they report very early, *i.e.* even on the first day of illness itself, which is the need of the hour (second day of amoxicillin treatment does not mean that the illness is of two days duration only). Radiographic pulmonary infiltrates do not distinguish viral from bacterial pneumonia [3], on which the physician's attention is focused as the next step in the management of pneumonia. In the end, there is a query about the exact utility of this study: whether it tries to assess the indications for initial and repeat chest radiograph during the course of pneumonia, or, it determines the duration of antibiotic treatment, or it determines the severity and evolution of radiographically diagnosed pneumonia

In view of all these limitations, the authenticity of conclusion and utility of this study observations are questionable. A prospective study with a definite objective, properly assembled "inception cohort" and a robust methodology would be ideal.

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REFERENCES

1. Fontoura MS, Matutino AR, Silva CC, Santana MC, Nobre-Bastos M, Oliveira F, *et al*. Differences in evolution of children with non-severe acute lower respiratory treat infection with and with outradiologically diagnosed pneumonia. Indian Pediatr. 2012;49:363-9.
2. Grant GB, Campbell H, Dowell SF, Graham SM, Klugman KP, Mulholland EK, *et al*. Recommendations for treatment of childhood non-severe pneumonia. Lancet Infect Dis. 2009;9:185-96.
3. Swingler GH. The radiologic differentiation between bacterial and virus lower respiratory infection in children: a systematic literature review. Clin Pediatr. 2000;39: 627-33.

Immunotherapy for Childhood Aplastic Anemia in India: A Case for Universal Healthcare?

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Aplastic anemia in childhood is a difficult condition to treat, and Nair and colleagues are to be commended for their meticulous collection of single-center data over a 22-year period [1]. They evaluated the efficacy of immunosuppressive therapy (IST) with antithymocyte globulin (ATG) and cyclosporine (CSA) on 33 pediatric patients with acquired aplastic anemia in the Indian setting. Their results indicate that in India, with appropriate supportive care, pediatric aplastic anemia patients treated with IST can achieve response rates similar to North America and Europe, where the response rate is as high as 81% [2]. In addition, they confirm the experience of other authors, that ATG and CSA alone are the backbone of IST in treating childhood aplastic anemia, and that administration of G-CSF reduced infectious complications, but had no impact on survival or outcome [3].

Nair, *et al*. [1] have added valuable data on clinical outcomes on childhood aplastic anemia in India. With an estimated population incidence in India of less than 2 per million, such clinical series are hard to collect and analyze. As they acknowledge, some of their data need to be interpreted with caution: median follow-up was only 24 months, and we know that there are significant changes in expected survival over time. As previously emphasized, for clinical studies in India to provide useful data, long-term follow up is of paramount importance, and this is especially true given the known late effects in aplastic anemia patients treated with IST [4].

The data yields other interesting trends: compared to the 42 pediatric patients treated with IST in Toronto by Pongtanakul, *et al*. [2], although response rates were similar (88 *vs* 81%), there was a significant decrease in the percentage of patients with complete response (CR) (24% *vs* 62%) with an increase in partial response (PR) (64% *vs* 19%). This predominance of partial responders was seen also in another Indian series reported by Chandra, *et al*. [5], who raised the question of effective cyclosporine administration, given the expense and uncertain quality in the open market. The only other published series by George, *et al*. [6], had 60 children who received ALG while 10 received ATG, with response seen in only 43.5%, evenly divided between CR and PR. We know the nature of the immune globulin product makes a significant difference, for example equine-ATG has been shown to be superior to rabbit ALG in terms of long-term response [7].

Since there is significant variation in both ATG and CSA available in the Indian market, we can speculate whether Nair, *et al*. could ensure that patients at the Army Hospital received medications of better quality than those who had to purchase it on the open market, but there is no easy way to verify this hypothesis. In summary, the most important lesson we have learned is that within Indian pediatric hematology there is no lack of knowledge or skill, and equivalent results to any other country can be achieved. The key lies in ensuring supply of appropriate medication and adequate supportive care, and as the World Health Organization grapples with the control of non-communicable disease, this is the deep-seated issue we have to struggle with: how do we ensure that all children in India receive access to curative healthcare?

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