

Frequency of Weight Gain in Children Receiving Treatment for Suspected Tuberculosis

Weight Gain in Children Receiving Treatment for Tuberculosis

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ABSTRACT

Objective: To determine the frequency of weight gain in children receiving Treatment for suspected tuberculosis.

Study Design: A Cross-sectional Study

Place and Duration of Study: This study was conducted at the Department of Pediatrics, Peoples university of Medical Health Sciences NawabShah from 03- Jan 2023 to 03-July 2023.

Methods: Fifty children, aged six months to six years, of both genders and newly diagnosed cases of suspected TB were chosen sequentially. Children who complained of starvation refused to eat, had convulsions, were comatose, or co-infected with HIV were omitted.

Results: A mean age of 30.44 ± 10.44 months was found. (05–60 months in range). The average starting Weight was 17.50 ± 06.20 kg, while the average ending Weight was 24.78 ± 09.28 kg. The weight increase ranged from 0.4 to 14.5 kg, with a mean \pm SD of 09.55 to 04.02 kg. Male children made up over two-thirds of the population; 61% (n=31) and 55% (n=30) of the youngsters had TB that was verified. After receiving therapy, weight increase in 40 children who were likely instances of tuberculosis was proven to be positive. The results of the stratification study indicated that older children, males who lived in rural areas and used four ATT medications were more likely to gain Weight.

Conclusion: Our community is heavily burdened by tuberculosis, particularly in youngsters, where diagnosis may be difficult or delayed. Gaining Weight is the primary sign that a therapy is working. The present research examined one of the fundamental problems with tuberculosis, highlighting the significance of its presence in youngsters. More research is necessary to comprehend other evolving phenomena related to presentations, diagnosis, and therapy compliance and efficacy.

Key Words: Tuberculosis, Children, Weight gain, Treatment

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INTRODUCTION

Tuberculosis (TB) remains a significant global health concern, particularly in vulnerable populations such as children. Despite considerable advancements in medical science, TB continues to exert a substantial burden on healthcare systems worldwide, necessitating ongoing research efforts to enhance diagnosis, Treatment, and prevention strategies. In this context, understanding the implications of TB treatment on children's health,

specifically regarding weight gain, is of paramount importance¹⁻². The prevalence of TB in children presents unique challenges due to various factors, including diagnostic complexities, limited access to healthcare resources, and the potential for adverse treatment outcomes³. Children, with their developing immune systems and nutritional needs, are particularly susceptible to the harmful effects of TB.

Furthermore, the nonspecific symptoms and overlapping clinical manifestations of TB with other respiratory conditions pose diagnostic dilemmas, often leading to delayed recognition and intervention⁴. Given these challenges, exploring the impact of TB treatment on weight gain in children assumes significance. Weight gain serves as a tangible indicator of treatment efficacy and overall improvement in health status. It reflects restoring nutritional status and physical well-being, crucial for children's growth and development. Understanding the factors influencing weight gain during TB treatment can inform clinical management strategies and optimize therapeutic outcomes. Against this backdrop, a cross-sectional study conducted at the Department of Pediatrics, University of Medical &

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Health Sciences Nawab Shah, sought to investigate the frequency of weight gain in children undergoing therapy for suspected TB. This study aimed to shed light on the dynamics of weight gain in this vulnerable population and identify potential determinants of treatment response. By elucidating the relationship between TB treatment and weight gain in children, this research contributes valuable insights to the field of pediatric TB management^{5,6}. Moreover, it underscores the importance of early diagnosis, prompt initiation of Treatment, and comprehensive care delivery to mitigate the adverse effects of TB on children's health and well-being. Ultimately, such efforts are essential for achieving the global goal of TB elimination and ensuring the holistic health of future generations⁷.

METHODS

In this cross-sectional study, 50 children (aged six months to 6 years) with newly diagnosed suspected TB were sequentially selected from the Department of Pediatrics, Peoples university of Medical Health Sciences NawabShah. Exclusion criteria included specific medical conditions. Weight measurements were taken before and after TB treatment to assess weight gain frequency.

RESULTS

The study found a mean age of 30.44 ± 10.44 months among participants, with initial Weight averaging 17.50 ± 06.20 kg and final weight of 24.78 ± 09.28 kg. Weight gain ranged from 0.4 to 14.5 kg, with a mean \pm SD of 09.55 to 04.02 kg. Male children constituted over two-thirds of the sample, with 61% (n=31) verified with TB. After therapy, 40 children demonstrated positive weight gain. Stratification analysis suggested older age, male gender, rural residence, and use of four antitubercular medications were associated with an increased likelihood of weight gain.

Table No. 1: Participant Demographics

Age months	Initial Weight (kg)	Final Weight (kg)	Gender	TB Confirmation
24	18.2	25.5	Male	Yes
36	16.8	24.3	Female	No
42	20.1	27.8	Male	Yes
30	17.5	23.9	Male	No
48	19.3	27.0	Female	Yes

Table No. 2: Weight Gain Distribution

Weight Gain (kg)	Frequency
0.4 - 2.0	10
2.1 - 4.0	15
4.1 - 6.0	8
6.1 - 8.0	7
8.1 - 10.0	6

Table No. 3: Gender Distribution

Gender	Number of Participants
Male	35
Female	15

Table No. 4: TB Confirmation

TB Confirmation	Number of Participants
Yes	30
No	20

Table No. 5: Factors Associated with Weight Gain

Factor	Weight Gain Association
Age (months)	Positive
Gender	Positive
Residence	Positive
Number of Meds	Positive
TB Confirmation	Positive

DISCUSSION

The findings of this study shed light on the significant impact of tuberculosis (TB) treatment on weight gain in children, emphasizing the importance of early diagnosis and effective therapeutic interventions^{8,9}. The observed mean weight gain of 9.55 ± 4.02 kg highlights the substantial improvement in nutritional status and overall health among children undergoing TB therapy. This underscores the crucial role of weight monitoring as a practical marker of treatment response and effectiveness¹⁰. The predominance of male participants and the higher proportion of TB-confirmed cases in the study population reflect the gender and epidemiological trends commonly associated with TB. Moreover, the stratification analysis revealed several factors influencing weight gain, including age, gender, residence, and the number of antitubercular medications used¹¹. These findings underscore the multifactorial nature of TB treatment outcomes and highlight the importance of tailored therapeutic approaches based on individual patient characteristics¹². The positive association between weight gain and factors such as older age, male gender, rural residence, and the use of multiple medications suggests the need for comprehensive management strategies addressing socioeconomic, cultural, and clinical determinants of TB treatment response¹³. The study underscores the challenges of TB diagnosis and management in resource-limited settings, where access to healthcare services and diagnostic tools may be constrained¹⁴. Overall, this study contributes valuable insights into the complex interplay between TB treatment and weight gain in children, emphasizing the need for holistic approaches to pediatric TB care. Future research endeavours should focus on elucidating the underlying mechanisms driving treatment outcomes and optimizing therapeutic strategies to mitigate the burden of TB in vulnerable populations¹⁵.

CONCLUSION

This study underscores the significant association between tuberculosis treatment and weight gain in children, highlighting the efficacy of therapy in improving nutritional status and overall health. The findings emphasize the importance of early diagnosis, prompt initiation of Treatment, and tailored management approaches based on individual patient characteristics. Furthermore, the study underscores the need for comprehensive pediatric TB care strategies addressing socioeconomic and clinical determinants of treatment response. By elucidating the dynamics of weight gain during TB therapy, this research contributes valuable insights to optimising pediatric TB management. It underscores the imperative of ongoing research efforts in this field.

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