Prevalence of Thinness and Overweight Among Urban Adolescents of West Bengal, India

India is facing the double burden of both thinness and overweight. However, nutritional status during childhood is an established predictor of nutritional status in adulthood. Therefore, identification of childhood nutritional status is of great importance. Several recent studies have investigated the nutritional status in adolescents [1–3]. But, there is paucity of knowledge on the nutritional status of urban adolescents in West Bengal. Thus, the present study has been undertaken to study the prevalence of both thinness and overweight in 9- to 17-year-old urban school children of West Bengal.

The present cross-sectional study was conducted in two districts namely, North 24 Parganas and Howrah. Out of 1153 school children, 486 (42.15%) boys and 667 (57.85%) girls aged 9–17 years were randomly selected from four schools, two from each district. Age (date of birth) was ascertained from the school register.

Anthropometric measurements namely height and weight were measured following standard techniques [4]. BMI (kg/m^2) was calculated subsequently. Nutritional status was evaluated using the World Health Organization (WHO) recommended age- and sex-specific cut-off values of BMI (kg/m^2) based on the National Health and Nutrition Examination Survey (NHANES) percentile values [5]. Thinness and overweight were defined as BMI (kg/m^2) $<$5th percentile and $\geq$85 percentile, respectively, as recommended by WHO [5].

Characteristics of the studied population including age- and sex-specific prevalence of thinness and overweight are presented in Table 1. BMI (kg/m^2) was significantly ($P < 0.01$) and positively correlated with age in both sexes. The overall prevalence of thinness and overweight were 28.44% and 6.71% in boys and 16.90% and 12.04% in girls, respectively. Thus, the prevalence of thinness was higher in boys. However, the prevalence of overweight in girls was double than that of boys. In both sexes, the prevalence of thinness was higher in lower ages and there was a trend of decreasing prevalence in higher ages. Although, no such trend had been observed for the prevalence of overweight. In addition, the prevalence of thinness and overweight were lower in urban adolescents than those reported in other populations [1, 2].

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Table 1
Prevalence of thinness and overweight

Age (year)	Sample size		BMI (kg/m^2)		Thinness (%)		Overweight (%)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
9	40	71	14.91 (2.91)	16.17 (2.55)*	32.5	19.72	10.00	14.08
10	68	97	15.20 (2.08)	16.48 (2.54)*	29.41	19.59	2.94	6.19
11	65	93	15.55 (2.46)	17.04 (3.99)*	44.62	25.81	4.62	18.28
12	83	99	16.68 (3.27)	17.57 (4.04)	40.96	27.27	14.46	14.14
13	64	86	17.04 (3.97)	18.72 (4.05)*	34.38	22.09	7.81	11.63
14	59	74	18.01 (2.64)	19.85 (2.85)*	23.73	4.05	3.39	6.76
15	49	57	18.56 (3.97)	20.30 (2.71)*	28.57	8.77	10.20	3.51
16	27	49	19.27 (3.22)	20.61 (3.79)	18.52	10.20	3.70	14.29
17	31	41	20.07 (2.48)	21.56 (4.93)	3.23	14.63	3.23	19.51
Total	486	667	16.93 (3.41)	18.29 (3.91)*	28.44	16.90	6.71	12.04

Standard deviations are presented in parentheses. *Sex difference ($P < 0.05$).

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Optimization Strategy to Minimize Wastage of Palivizumab during the 2008 RSV Season in Sao Paulo, Brazil

Summary

Palivizumab is currently recommended to high-risk children as a prophylaxis for respiratory syncytial virus (RSV) infection. However, it is still very expensive for developing countries like Brazil. Herein, we describe our strategy to minimize wastage of Palivizumab during the 2008 RSV season. Appointments were fixed for 304 children on 2 days of the week, so that a mean of 19.9 children received Palivizumab per day. That allowed remaining volumes of Palivizumab vials to be pooled and used for other children on the same day within the 6 h period after opening a vial. That strategy saved 26.3% of vials, which represents USD749 143.75.

Key words: Palivizumab, prophylaxis, respiratory syncytial virus

Introduction

Respiratory syncytial virus (RSV) can cause life-threatening disease in infants, especially premature infants and children with chronic lung disease or with congenital heart disease [1].

Palivizumab is a humanized mouse monoclonal antibody that binds to the fusion (F) glycoprotein of RSV [2]. Administration of Palivizumab to high-risk children is currently recommended as a prophylaxis during the RSV season [1].

In July 2007, the State of Sao Paulo Health Secretariat started providing Palivizumab during RSV season to children born at 28 weeks of gestation or earlier up to 1 year of age, after discharge from neonatal unit, and to children up to 2 years of age with hemodynamically significant congenital heart disease or chronic lung disease, who had required medical therapy within the 6 months prior to RSV season [3].

Despite its proven efficacy in reducing hospitalization attributable to RSV, Palivizumab is still very expensive for developing countries like Brazil. Reducing costs by optimizing drug administration is therefore a way to allow more children to benefit from RSV prophylaxis.

Herein, we describe our experience with Palivizumab administration at the Reference Center for Special Immunobiologicals at the Federal University of Sao Paulo, in Sao Paulo, Brazil during the 2008 RSV season.

Methods

In 2008, 1158 children received Palivizumab in the State of Sao Paulo. Twelve centers were selected to administer the RSV prophylaxis during RSV season which, in the State of Sao Paulo, starts in April and ends in August [4]. Our center was responsible for 304 patients (26.3% of 1158), who received the humanized monoclonal antibody for a mean of 3.1 months (range, 1–5).

To minimize wastage, appointments were fixed for the children to receive Palivizumab on two working days of the week, so that a mean of 19.9 children (range, 1–46) were seen on each of those days.

Because a recent report has shown improved compliance with home-based administration of Palivizumab [5], we have also assessed compliance with the injection regime. In this study, Palivizumab was always applied at our vaccination center.

As in Frogel *et al.* [5], compliance with Palivizumab administration was defined in two ways. The first definition compared the actual with the expected number of injections received, based on the month that the first injection was administered. The second definition included subjects receiving at least two doses and was calculated as the proportion of subjects who received the second, third, fourth and fifth dose of Palivizumab within 35 days of the previous dose.

Results

Each child received 15 mg kg^{-1} of Palivizumab intramuscularly every month. Because some children required more and others required less than one 100 mg vial of Palivizumab, remaining volumes were