Relationship between stunting and wasting in children

Dear Editor,

The authors of the study titled 'Social determinants of stunting in rural area of Wardha, Central India' by Deshmukh PR et al published in MJAFI 2013; 69:213–217 must be complimented on drawing the attention of the audience on the importance of stunting in children in India. However, a comparison of the three indicators in the same population and their velocity there of, would have possibly made the article more interesting. Following comments on the three indices are made in this regard:

Anthropometry is used to estimate the nutritional status of populations across age groups. The three most important indicators are Weight for Age (underweight), Height for Age (stunting) and Weight for Height (wasting). Stunting ($z < -2SD$) represents cumulative chronic undernutrition in children and is related to environmental and socio-economic circumstances.¹ Weight for age reflects body mass relative to chronological age. Weight for age fails to distinguish between a short child with adequate weight and a tall thin child. Short term change in weight for age reveals change in weight for height.² Wasting or thinness, measured by weight for height ($z < -2SD$) on the other hand indicates in most cases a recent and severe process of weight loss, and is associated with availability of food and disease, and is quickly reversible on suitable intervention. As per WHO, provided there is no severe food shortage, the prevalence of wasting is critical above 15%, whereas in India, the prevalence is 22% (NFHS 3) in children below 3 years of age.³

Cross sectional studies⁴ have found a downward shift in the distribution of height for age in the first 2 years of life. The prevalence of stunting rises from the age of three months and slows down at around three years. Low height-for-age probably reflects a continuing process of "failing to grow" or "stunting" and for older children, it reflects a state of "having failed to grow" or "being stunted".² On the other hand, weight-for-height falters in the first year of life, after which it stabilizes or increases.¹ Decreased weight for height is short term and reversible if the child has access to adequate nutrition. Wasting may preclude linear catch-up growth over the long term.

The anthropometric assessment of a population thus needs to be comprehensive in nature, taking all the three

indices into consideration. If the prevalence of wasting is high, such as in acute starvation or infection, efforts should be towards providing adequate nutrition and prompt management of infections. If the prevalence of stunting is high but the prevalence of wasting is low or normal, preventive strategies should be directed towards socio-economic conditions, dietary quality, hygiene and sanitation, adequate potable water, etc.⁵

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Reply

Dear Editor,

On behalf of the authors, I thank the readers for the deep interest and scholarly analysis of the article and for providing a well researched addendum which will help in my future endeavours. In response to authors two concerns my reply is as below:

1. Velocities would have been reported.
2. All three indicators would have been reported as it presents comprehensive picture. Following is our response.

First, for velocities to be reported a data from cohort study is required. This being a cross-sectional study, velocities cannot be calculated.

Secondly, we agree with the authors that presenting all three indicators (weight for age, weight for height and height for age) brings out comprehensive picture of malnutrition. As far as social determinants of malnutrition are concerned, stunting is much more affected by inequality than the wasting.¹ As rightly authors have stated in last paragraph stunting demands socio-economic interventions. Hence, we chose to report stunting. This also helped keep messages simple and uncomplicated.

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Letter to the Editor

Dear Editor,

We read with interest the article titled, “Can we prevent pediatric HIV? An experience in a tertiary care hospital” by Gupta et al¹ and published in MJAFI 2013; 69:218–221. At the outset, we compliment the authors for an excellent outcome. A triple-drug antiretroviral regime was given to HIV positive mothers by the gynecologists, caesarean section was done if maternal viral load was >1000 copies/ml and their neonates were given antiretroviral (ARV) prophylaxis with single dose nevirapine followed by six weeks of zidovudine. The mothers were advised replacement feeding for the neonate. Notwithstanding the excellent results, we want to highlight the recent WHO recommendations for preventing mother to child transmission (PMTCT) of HIV.²

According to the World Health Organization 2013 consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach are a combination antiretroviral regimen (once-daily, fixed-dose combination of tenofovir, lamivudine/emtricitabine, and efavirenz), should be initiated in all pregnant and breastfeeding women detected to be HIV positive, regardless of their CD4 cell count. Thereafter, pregnant women who are eligible to receive antiretroviral treatment (CD4 count of ≤ 500 cells/mm³ or clinic stage 3/4), should continue taking HIV treatment for life.

In women not meeting treatment eligibility criteria, either a triple-drug antiretroviral regimen should be taken throughout pregnancy, delivery and breastfeeding, and be continued for life, regardless of CD4 count/clinical stage (Option B+) or a triple-drug antiretroviral regimen should be taken throughout pregnancy and delivery and if the mother is breastfeeding, this should be continued until 1 week after breastfeeding has finished (Option B).

For HIV-exposed infants, a six weeks of prophylaxis with daily nevirapine should be given and it is recommended that

public health authorities focus either on promoting breastfeeding and providing antiretroviral interventions to prevent transmission or avoid breastfeeding and provide alternate sources of safe nutrition.

If the HIV-infected women chooses to breastfeed, the recommendations are – exclusive breastfeeding for six months; thereafter breastfeeding along with appropriate complementary feeding is continued for another six months given the increased infant morbidity associated with shortened breastfeeding, earlier weaning and replacement feeding.^{3–6} After a year, breastfeeding can be discontinued, once a safe diet that is nutritionally adequate can be provided.

If the HIV-infected mother is not breastfeeding, then the infant can be given either once-daily nevirapine or twice-daily zidovudine from birth until age 4–6 weeks.

Infants of mothers who interrupt antiretrovirals during breastfeeding, should receive a course of once-daily NVP until six weeks after resumption of maternal antiretroviral use or until one week following the cessation of breastfeeding.

To conclude, according to WHO guidelines, mother to child transmission of HIV is not an acceptable alternative. Hence, they have recommended a triple-drug regimen for all mothers during pregnancy and breastfeeding period and ARV prophylaxis in neonates with daily nevirapine for six weeks. These steps would definitely help in achieving global goal of eliminating new HIV infections in children and keeping their mothers alive to raise them.

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