

BACKGROUND

Isoniazid preventive therapy (IPT) is recommended for pregnant women with HIV.

The TB APPRISE trial found IPT initiation during pregnancy was associated with higher incidence of adverse pregnancy outcomes than postpartum initiation.

Effects of *in utero* IPT exposure on infant growth are unknown.

DIFFERENT TYPES OF UNDERNUTRITION

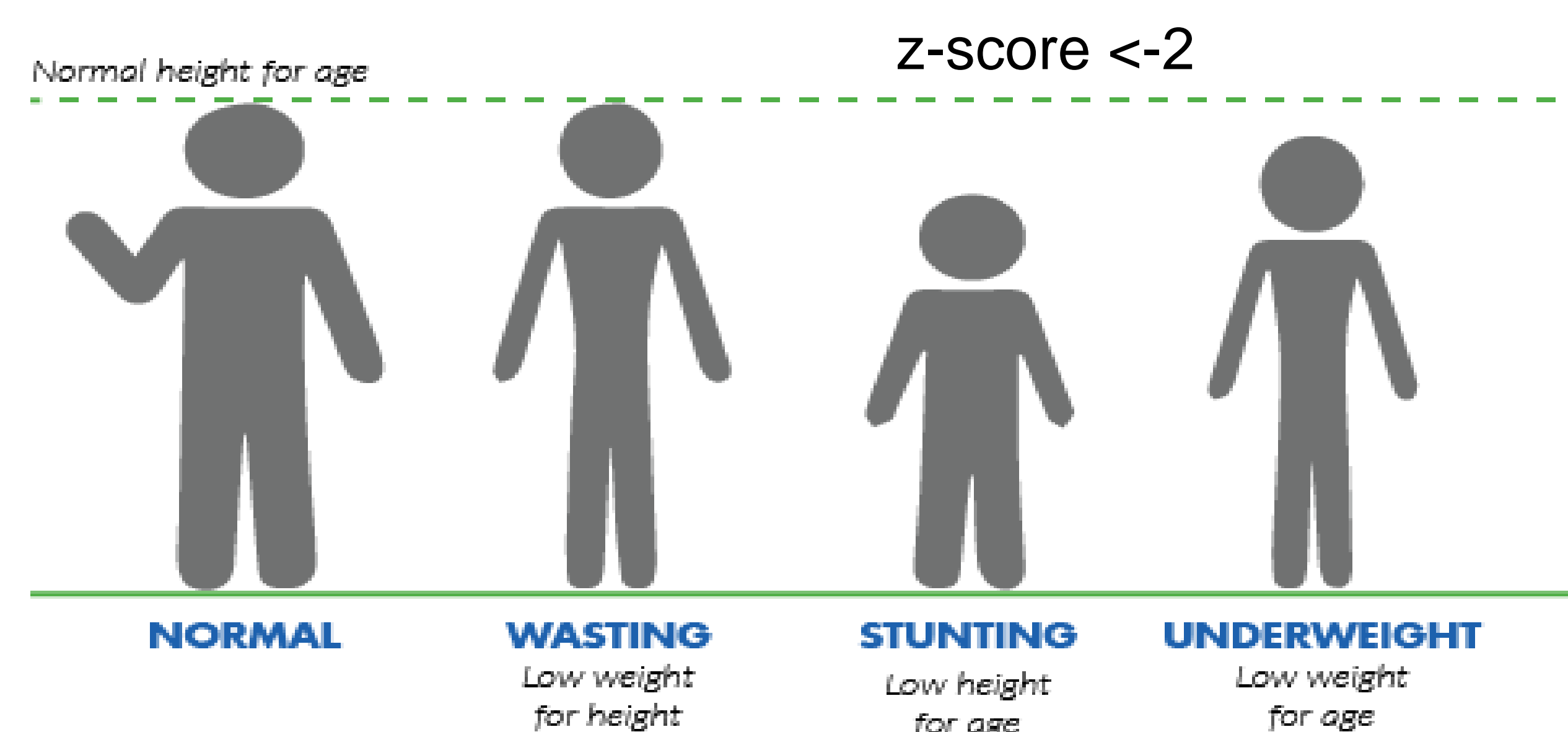


Figure 1: Definition of hunger by World Vision, 2015

METHODS

- This post-hoc analysis used TB APPRISE data, a multicenter, double-blind, placebo-controlled, randomized clinical trial, which randomized mothers to 28-weeks of IPT starting in pregnancy (pregnancy-IPT) or postpartum week 12 (postpartum-IPT).
- Mother-infant pairs were followed to 48 weeks postpartum.
- Kaplan-Meier survival analysis and Cox proportional hazards regression were used to compare time to infant growth faltering (underweight, wasting, or stunting) between arms to 12 weeks postpartum and to 48 weeks, and in sex-stratified analyses.

- Infants in pregnancy-IPT arm experienced 1.52-fold increased risk of being underweight by 12 weeks and 1.36-fold increased risk of being underweight by 48 weeks postpartum.
- Growth effect of pregnancy-IPT was seen in male but not female infants in sex-stratified analyses

Table 1: Risk of growth faltering, stratified by infant sex in analyses to 12 and 48 weeks postpartum

Analysis	Model	Isoniazid started during	Underweight		Stunting		Wasting	
			HRa (95% CI) ^a	P-value	HRa (95% CI) ^a	P-value	HRa (95% CI) ^a	P-value
12-week postpartum	Overall	Pregnancy	1.52 (1.10, 2.11)	0.012	1.13 (0.91, 1.40)	0.280	1.08 (0.81, 1.44)	0.589
	Males	Pregnancy	2.21 (1.40, 3.49)	<0.001	1.25 (0.92, 1.68)	0.150	1.75 (1.13, 2.72)	0.012
	Females	Pregnancy	0.96 (0.59, 1.57)	0.867	0.97 (0.70, 1.34)	0.848	0.73 (0.49, 1.09)	0.121
48 weeks postpartum	Overall	Pregnancy	1.36 (1.03, 1.80)	0.031	1.10 (0.91, 1.33)	0.332	1.01 (0.78, 1.31)	0.940
	Males	Pregnancy	1.88 (1.28, 2.77)	0.001	1.12 (0.85, 1.46)	0.427	1.47 (1.00, 2.16)	0.048
	Females	Pregnancy	0.90 (0.59, 1.38)	0.642	1.06 (0.80, 1.42)	0.682	0.76 (0.53, 1.09)	0.134

^aHR_a – adjusted hazard ratio – adjusted for infant sex, maternal age, body mass index, ART regimen used, CD4 count, viral load, education, and household food security.

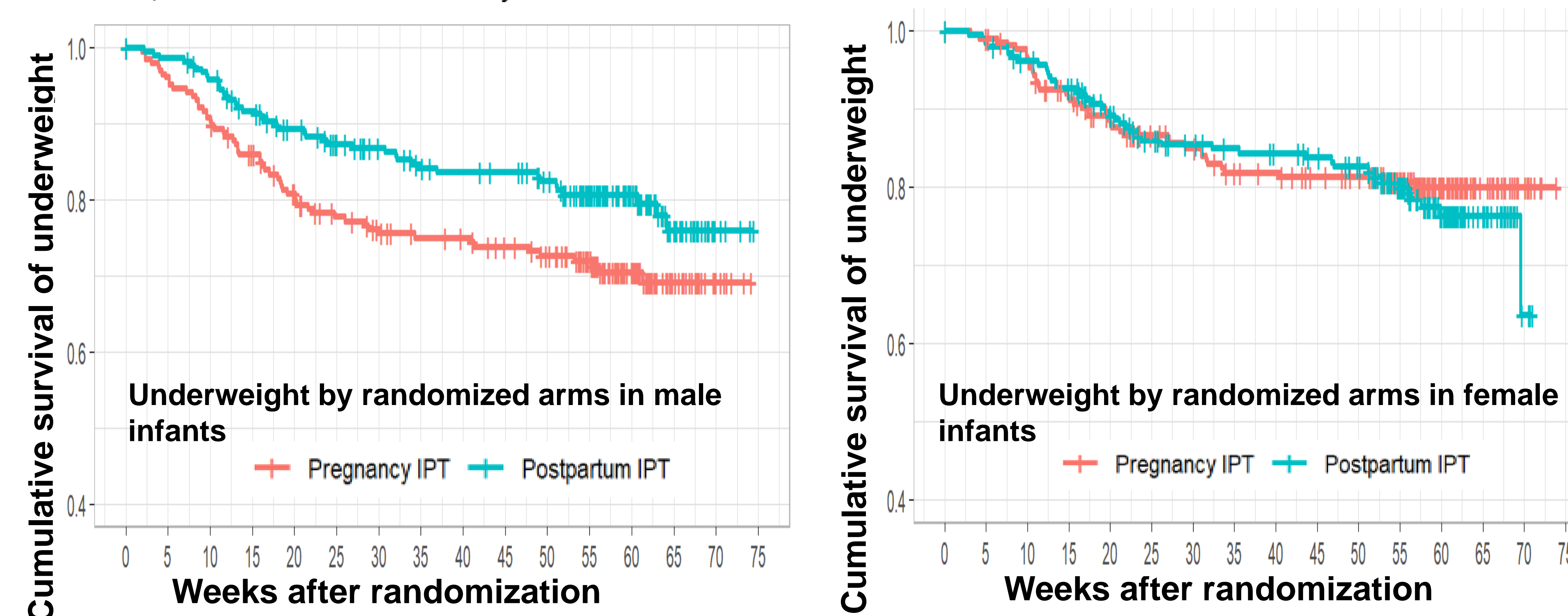


Figure 2: Survival probability of underweight by sex of infants by randomized arms

RESULTS

- Among 898 infants exposed to but without HIV (HEU) with growth data, median maternal age was 29 years (interquartile range: 24-33), 447 (49.8%) were females, and 165 (19.2%) were small for gestational age at birth.
- Six mothers and one infant developed TB during the study with similar TB rates between arms.
- Maternal pregnancy-IPT was associated with underweight overall and underweight and wasting in male infants.
- Maternal pregnancy IPT was not associated with growth faltering in female infants.

CONCLUSIONS

- Maternal IPT during pregnancy was associated with significantly increased risk of underweight among HEU infants in the first year of life.
- Male infants exposed to pregnancy-IPT had significant risk of underweight and wasting that persisted over the first year of life.
- These data add to prior TB APPRISE data, suggesting IPT during pregnancy impacts infant growth among male infants. These data could inform monitoring and management and warrants further examination of potential mechanisms.

ACKNOWLEDGEMENT

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