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**Efficacy of iron-folic acid treatment for reducing anemia prevalence and improving iron status in women of reproductive age: A one-year longitudinal study**

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**Abstract**

**Background:**Anemia control has hitherto been through prophylaxis with weekly iron folic acid (IFA) in Indian women of reproductive age (WRA). Recently, a more precise approach has been proposed, that uses a 'screen and treat with IFA' approach for anemic WRA, combined with continued prophylactic IFA in non-anemic WRA. The efficacy of this approach was assessed in Indian WRA, along with changes in iron status biomarkers.

**Methods:**Young WRA (n = 470), aged 17-21 y, were screened for their venous blood hemoglobin (Hb) and treated with IFA for 90 days according to their grade of anemia, or if non-anemic, administered prophylactic IFA, per Indian policy guidelines, and then followed-up for an additional 9-months. Their Hb, plasma ferritin (PF), transferrin receptor, hepcidin and C-reactive protein concentrations were measured at baseline, during treatment and further follow-up. Anemia was diagnosed using Hb (<12 g/dL) and iron deficiency (ID) using PF (<15 μg/L) cut-offs after adjustment for inflammation. Co-existence of anemia and ID was labelled iron deficiency anemia (IDA).

**Results:**At baseline, in the whole group anemia, ID and IDA prevalence was 69.6%, 68.7% and 62.4%, respectively. At 90 days, IFA treatment or prophylaxis significantly reduced anemia by 40 percentage points (pp), from 69.6% at baseline to 29.8%; ID by 47.3 pp, and IDA by 48 pp. Moreover, significant treatment effects persisted at 365 days of follow-up.

**Conclusion:**The 'screen and treat with IFA' approach is efficacious in reducing the prevalence of anemia in general among WRA, with persistent and significant effects after 9 months of follow-up.

**Trail registration:**CTRI No:2019/02/017806, http://ctri.nic.in/.

**Keywords:**Anemia; Ferritin; Follow up; Hemoglobin; Iron status; Iron-folic acid.

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