Title: Iron and Folic Acid Supplementation as a Predictor of Anemia in Pregnant Women in Rural India

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Background: Perinatal anemia is a massive global public health burden with an estimated global prevalence of approximately 40%. Severe anemia increases the risk of maternal mortality and can adversely affect fetal development. Adequate correction of anemia is essential for a healthy pregnancy and infant, but universal screening and monitoring is not the care standard in most LMICs. In lieu of universal screening and treatment, providing access to Iron Folic Acid (IFA) tabs is considered an effective and cost-efficient intervention to prevent and treat anemia of pregnancy. However, despite widespread availability of IFA tabs, anemia prevalence continues to be high and the presence of IFA programs may falsely reassure clinicians that patients taking them have adequate hemoglobin. The objective of this study is to evaluate the efficacy of using Iron Folic Acid as a predictor of adequate hemoglobin levels in pregnant women.

Methods: The study took place at Mota Fofalia Community Health Center (MF-CHC) in Gujarat, India operated by a public-private partnership. The University of Utah operates an academic global health program in collaboration with MF-CHC and assists the health center in sustainable capacity building in maternal-child health. As part of a community-based antenatal care (ANC) program, we recruited a cohort of pregnant women from the surrounding community to complete a standardized nutrition and health survey and participate in scheduled prenatal visits according to WHO and Indian ANC guidelines which include measurement of vital signs and ANC guideline-based interventions. At each ANC visit, a blood hemoglobin level was drawn, and each participant was asked if they are currently taking IFA or Albendozole, an antiparasitic.

Results: A total of 501 women were included in the study. Of those in their 1st trimester, 77 (68%) reported taking IFA while 37 (32%) did not. Their screening hemoglobin levels were 10.66 g/dL and 10.37 g/dL respectively (p=0.33). Of those beyond their first trimester, 371 (96%) reported taking IFA while 15 (4%) did not. Their screening hemoglobin levels were 10.14 g/dL and 9.78 g/dL respectively (p=0.32). In the group taking IFA tablets, 97% were also taking Albendozole while only 21% of mothers not taking IFA tablets were taking Albendozole. Hemoglobin for those taking Albendazole was 10.1 g/dL compared to 10.2 g/dL for those not taking (p=0.82).

Conclusion: In areas with a high prevalence of anemia, patient compliance with standard IFA antenatal therapy is not an adequate indicator of intervention. While it appears many mothers begin taking IFA as they become pregnant, the presence of readily available IFA therapy to the community is not sufficient in addressing perinatal anemia.