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Letter to the Editor

Challenges to rational prescribing and use of essential medicines in India

Sir,

I have read the Editorial entitled 'Challenges to rational prescribing and use of essential medicines in India' which was published in your journal with great interest. This has prompted me to address certain issues related to rational prescription of iron supplements in pregnancy.

Anemia is a common problem for pregnant women and iron deficiency is considered the main cause of anemia. The worldwide prevalence of anemia in pregnant women is 41.8%.[1] Therefore, iron supplements are widely recommended and used during pregnancy.[2] Appropriate selection and use of medicines is a basic requirement for rational medicine practice. However, the World Health Organisation (WHO) has estimated that half of all medicines are inappropriately prescribed and used.[3] Same can be seen with prescription of iron supplements in pregnancy. It is a known fact that Indian market is flooded with different iron preparations containing ferrous, ferric, carboryl iron and iron (III) hydroxide polymaltose complex as a source of elemental iron for the treatment of iron deficiency anaemia. Though any preparation can be used provided it has sufficient iron bioavailability WHO model list of essential drugs (2011) recommends a ferrous salt. Even some iron preparations contain glycerinated haemoglobin to combat anaemia. But haemoglobin per se is a poor source of elemental iron which is absorbed by the body. So achieving haemoglobin levels with this drug requires longer period of administration leading to higher expenditure.[4]

Further multiple micronutrient supplementations along with iron which are often prescribed in pregnancy have no proven efficacy than iron supplementation alone but it can definitely increase the cost of preparation leading to non-compliance.

Some iron preparations containing multiple micronutrients available in the market are shown in Table 1.

Table 1: Different Iron preparations showing their compositions and costs.

S. No	Brand name	Composition		Preparation	Cost (Indian Rupees)
1.	Ocofer Cap. (Ochoa)	Ferrous fumarate L-Lysine Monohydrate Folic acid Vitamin B12 Zinc sulphate Copper sulphate Manganese Sulphate	350mg 150mg 1.5mg 15µg 66mg 0.2mg 1mg	10 capsules 01 capsule	11.80 1.18
2.	Ferox Cap. (Micro Nova)	Carboryl iron Folic acid Vitamin B12 Vitamin E Selenium Zinc	60mg 1 mg 5 µg 15 I.U 60 µg 11.5mg	10 capsules 01 capsule	48.00 4.80
3.	Iberol Cap. (Pfizer)	Ferrous sulphate Vitamin B12 Liver dessicated Vitamin C Folic acid Vitamin B1 Vitamin B2 Nicotinamide Vitamin B6 Calcium pantothenate	525mg 12.5mg 100mg 75mg 1mg 4.5mg 5mg 45mg 1.5mg 5mg	30 tablets 01 tablet	49.00 1.63

4.	Ferisis Cap. (Alembic)	Carboryl iron Folic acid Vitamin B12 Vitamin E Selenium Ascorbic acid β- carotene Thiamine Riboflavin	50mg 1mg 7 µg 15 I.U. 82 µg 75mg 5.17mg 4.5mg 5mg	15 capsules 01 capsule	59.90 3.99

Source: CIMS (Current Index of Medical Specialties) 2007; July-Oct: 420-31.

Calcium salt of pantothenic acid is often added along with iron even though it is a well-known fact that it has no accepted therapeutic use in human medicine and its deficiency is unlikely in man because of its widespread distribution in food. Also addition of minerals like manganese, selenium has no beneficial effect. Manganese deficiency has been reported in patients with rare genetic abnormalities and selenium deficiency is generally endemic in one part of China or following prolonged parenteral therapy. Even excessive intake of selenium is associated with toxic symptoms like fatigue, gastrointestinal tract disturbances, nail and hair changes and peripheral neuropathy.[5] Furthermore there are indications that supplementation with zinc and vitamin A during pregnancy can affect the immune functions of the neonate and that these effects might be long lasting.[6]

There are some studies indicating improvement in infant birth weight with multiple micronutrient supplementations[7] but studies by Ramakrishnan and Christian et al failed to detect any benefit for birth outcomes like reduction in prevalence of low birth weight and prematurity.[8,9] On the contrary the meta-analysis by Fall and coauthors, demonstrated the significant increase in the prevalence of large-for-gestational age babies with micronutrient supplementation during pregnancy raising the possibility of increasing the number of obstructed deliveries.[10]

Hence it can be suggested that inclusion of multiple micronutrients to iron supplements adds to the economic burden on the part of the patients without giving any potential benefits. What is actually needed in developing country like ours where malaria and hookworm infestation adds to the maternal anemia is to impart education to women who can adopt family planning measures and provide balanced nutrition to their family with careful selection of a variety of food, meal planning and preparation.

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