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### Evaluation of iron concentration in selected Ayurvedic preparations used for iron deficiency anaemia

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Iron deficiency anaemia is one of the most common and widespread nutritional disorders in the world. It appears to be a serious health problem as it causes general weakness, lethargy, sub-optimal work performance, mental retardation, poor intelligence and an abnormal immune response. Many Ayurvedic pharmaceutical preparations such as *Arogyawardana vati*, *Punarnavadi mandoora*, *Lauhasava*, *Navayasa lauha* and *Chandraprabha vati* are available for the treatment of iron deficiency anaemia. After mixing with ghee, bees honey or milk, these preparations are orally administered to the patients as these items are believed to increase the absorption level of iron. According to Ayurveda pharmacopoeia, the recommended maximum daily dosage of *Arogyawardana vati*, *Punarnavadi mandoora*, *Lauhasava*, *Navayasa lauha* and *Chandraprabha vati* are 1.0 g, 1.0 g, 90 ml, 1.0 g and 1.5 g, respectively. Humans experience iron toxicity at levels above 20 mg of iron per kg of the body weight. The objective of this study was to determine the iron content of selected Ayurveda pharmaceuticals in order to evaluate the quality of those preparations. *Arogyawardana vati*, *Punarnavadi mandoora*, *Lauhasavaya*, *Navayasa lauha* and *Chandraprabha vati* (three samples per each) were used as material in this study. The wet digestion method was used as the pre-preparation procedure of samples prior to analysis. Total iron content was determined using a multi-parameter-photometer (HI 83200, Hanna instruments, Germany).

The highest total iron content was found in *Arogyawardana vati* ( $11.67 \pm 1.26$  mg/g). The total iron content of *Punarnavadi mandoora*, *Lauhasavaya*, *Navayasa lauha* and *Chandraprabha vati* were  $1.15 \pm 0.14$  mg/g,  $0.43 \pm 0.08$  mg/g,  $7.3 \pm 1.55$  mg/g and  $1.56 \pm 0.58$  mg/g, respectively. Consequently, if a person (assuming a body weight of 50 kg) consumes the prescribed dosages of the above drugs, these medicines would contribute to an increase in the level of iron by 0.23 mg/kg/day, 0.02 mg/kg/day, 0.83 mg/kg/day, 0.15 mg/kg/day and 0.05 mg/kg/day respectively. Those values were compared with the toxic level of iron. The results revealed that the determined levels of iron in the above preparations are below the toxic level of iron and that the prescribed dosage of these Ayurveda medicines could be helpful in increasing the iron level of anaemic patients.