

## ***Study of the iron chelating effect of green tea in smear positive TB patients using sputum smear, serum malondialdehyde and blood iron indices***

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### ***Abstract***

**A** new facile and scalable approach for utilizing basic ionic Green tea with possessing iron chelating properties can be useful in TB treatment and management. We studied the effect of green tea consumption on iron status and improving process of pulmonary tuberculosis treatment (accelerating the negative sputum smear, reducing the level of oxidative stress). Following the approval by Ethics Committee for Human Studies of Golestan and Tehran Universities of Medical Sciences and also obtaining the written consent of patients, this double-blinded randomized clinical trial study, was conducted on patients with TB, who were assigned randomly to the intervention group (41 patients) receiving 500mg catechin of green tea extract and the control group (39 subjects) receiving placebo for two months, since the beginning of concomitant anti-TB treatment. Sputum evaluation was carried out on three slides using the Ziehl Nelson method. At first, the demographic and dietary intake data were obtained. After obtaining 10ml of venous blood, hemoglobin (Hb), transferrin, ferritin, Total Iron Binding Capacity (TIBC), Iron and Serum malondialdehyde (MDA) were measured at the beginning and end of the study. Sputum samples were collected from the third week (every 10 days) and the reduction of microbial load was also tested until sputum smear became negative. Data were processed using independent and paired t-test, McNemar, Wilcoxon, Kaplan-Meier, Log-rank test and Cox regression model. P-value was taken significant as  $<0.05$ . Average daily energy intake of patients was  $1518 \pm 431$  kcal, distribution of which was as follow: carbohydrates (58%), protein (17%) and fat (22%). Vitamin D and Zinc intake of patients were less and iron intake was higher than the DRI. Weight changes in both groups of placebo and green tea had tendency of increase with a significant difference at two and six month follows ups ( $p < 0.0001$ ).

### ***Biography:***

Shahryar Eghtesadi received Bachelor degree in Nutrition Science and Food Chemistry 1975, from Shahid Beheshti University of Medical Sciences, Tehran; MSPH degree in Nutrition, 1977, from Tehran University of Medical Sciences, Tehran and PhD from University of California at Davis(UCD), USA, in Nutrition (1985).

### ***Speaker Publications:***

1. "The effect of green tea extract supplementation on sputum smear conversion and weight changes in pulmonary TB patients: A randomized controlled trial"; Med J Islam Repub Iran/ Vol 30, 2019.
2. "Effect of turmeric on glycemic status, lipid profile, hs-CRP, and total antioxidant capacity in hyperlipidemic type 2 diabetes mellitus patients"; Phytotherapy Research/ Vol 33, 2019, 1173-1181.
3. "Comparison of the intake of macronutrients and antioxidant compounds based on military force stress"; J Mil Med/ Vol 22, 2020, 384-392.
4. "Prevalence of food insecurity in pregnant women in Khorramabad city and its association with general health and other factors"; J Nutr/ Vol 14, 2019, 21-29.

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