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Interplay of serum hepcidin with female sex hormones, metabolic syndrome and abdominal fat distribution among fertile and postmenopausal women**Ragaa Abed-El Shaheed Matta, Mohamed Emad, Ahmed Abdelfadel and Mohamed Gaber**
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We found significant relations of serum hepcidin with estradiol, progesterone, CT assessed abdominal fat Subcutaneous Fat (SCF), Peritoneal Visceral Fat (PVF) and liver density, IR indices (Fasting Blood Sugar (FBS), fasting insulin and HOMA-IR) and Metabolic Syndrome (MetS) among 64 postmenopausal (group-I) and 96 fertile women (group-II). Among group-II, hormonal assay and hepcidin (ELISA Sandwich method) were assessed during early follicular (group-IIF) and mid luteal phases (group-IIL). Group-I compared to group-IIF and group-IIL, showed significant higher hepcidin (12.8 ± 3.8 versus 6.5 ± 2.6 and 9.5 ± 3.7 (ng/ml), $p < 0.001$), iron, ferritin, Hepcidin/Ferritin Ratio (HFR), IR indices. Also these parameters including hepcidin were significant higher among group-IIL than group-IIF. Among these three groups, hepcidin had significant positive correlations with ferritin, IR indices, BMI, Waist Hip Ratio (WHR), blood pressure, lipid profile, SCF, PVF, liver density and significant negative correlation with iron, HDL and eGFR. Interestingly, hepcidin showed significant positive correlations with estradiol ($p < 0.001$, $p = 0.013$) and progesterone ($p < 0.001$, $p = 0.003$) among group-I and group-IIF. Hepcidin levels increased significantly and linearly with increasing number of MetS features. Among group-IIF and group-I, cut off points of hepcidin for prediction of MetS were >5.8 and >10.3 ng/ml with AUC of 0.91, sensitivity 93.3% and 100%; specificity 71.4% and 76.5 % respectively. Stepwise regression analysis for hepcidin as dependent factor which were: BMI, ferritin, HFR, cholesterol, creatinine among group-I and group-II; insulin and HOMA-IR among group-I and group-IIF; iron, LDL, DBP, WHR among group-II; SCF among group-I; liver density, PVF and Hb among group-IIL and SBP, FBS, progesterone, eGFR, TG and HDL-C among group-IIF.

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