

中文題目：血清游離血紅素與總睪固酮之比：闡釋內質網壓力、飲食與肝損傷之新工具

英文題目：Serum Free Hemoglobin to Total Testosterone Ratio: A Novel Tool for Elucidating Endoplasmic Reticulum Stress, Diet and Hepatic Injury

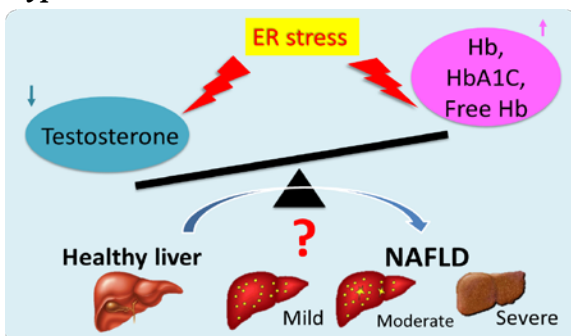
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Background:

- Endoplasmic reticulum (ER) stress, indicated by increasing glucose-regulated protein 78 (Grp78), is implicated in metabolic disorder disease such as non-alcoholic fatty liver disease (NAFLD).
- NAFLD is characterized by elevated hemoglobin (Hb) and decreased testosterone (T) among adult male.
- Testosterone regulate systemic iron through regulating erythropoietin (EPO) and hepcidin, a master iron regulator.
- Aim: to investigate (1) predictive effects of Hb subtypes to total T ratio on NAFLD severity and (2) the role of ER stress on Hb/total ratios.

Hypothesis:



Conclusion:

ER stress affects serum free Hb /total T ratio, which may serve as alternative diagnostic value to distinguish NAFLD subtypes.

Results:

- Serum free Hb/total T ratio demonstrated a significant high AUC of 0.955 for the comparison between moderate and severe.
- By the use of free Hb/total T ratio cut-off point (<51.66 vs. ≥ 51.66) to distinguish moderate from severe NAFLD, western dietary pattern (Factor 5) was strongly associated with an increased risk for severe (OR:3.77 (1.67-8.49) compared to moderate.
- Grp78 mRNA in peripheral blood mononuclear cells (PBMC) was increased in relation to NAFLD severity. Animal model showed tunicamycin significantly increased serum free Hb but decreased total T levels, resulting in increased ratios of Hb subtypes to total T.