Reviewer's report

Title: Inverse correlation between serum interleukin-6 and iron levels among Japanese adults

Version: 1  Date: 9 October 2013

Reviewer: kishor B raja

Reviewer's report:

MAJOR;

a) There was no indication of the bleeding procedure i.e. time of draw or if the blood samples were fasting samples? As the authors are no doubt aware, dietary intake as well as timing (diurnal variation) will affect serum iron concentrations. Furthermore, hepcidin concentrations have been reported to exhibit diurnal variation too. The overall process thus needs standardisation (MAJOR REVISION)

b) Measurement of TIBC and calculation of % transferrin saturation would have been useful in assessing if the changes in serum iron were really significant (MAJOR)

c) The measurement of a positive inflammatory marker (e.g. CRP) in the samples would have been beneficial- to get an indication of the severity of infection? (MAJOR)

d) Only 4.3% of the studied group had an IL 6 concentration > 4ng/L. Is there thus too much emphasis on the OR value (7.88) based on such a small patient sample number? (MAJOR)

MINOR:

e) The cut-off levels for IL-6 and iron: were they ascertained in a similar population (in terms of geographical location, dietary intake etc.) to the one being studied? (MINOR)

f) Page 8 lines 3-4 seem to be contradictory (MINOR).

g) Could the authors comment on whether the fall in serum iron seen in their population could be attributable to (i) iron utilisation by H pylori, (ii) reduction in intestinal iron absorption due to atrophy associated gastric hypochlorhydria- following the infection (iii) heritable differences in hepcidin expression (MINOR)

h) There was no indication of assay variability and phenotypic variation in iron metabolism in individuals (MINOR)

DISCRETIONARY:

i) The significant inverse correlation between the 2 parameters in males (log plots) is, as highlighted by the authors, likely to be due to the 3-4 high IL6 values (DISCRETIONARY)
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'