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Judul Artikel Ilmiah : Association of Hair Total Mercury with Serum Ferritin Level Among Indonesian Pregnant Woman: A preliminary Study

Penulis Artikel Ilmiah : **Muflihahatul Muniroh**, Sackhol Bakri, Ainun R. Gumay, Julian Dewantiningrum, Mulyono Mulyono and Hardian Hardian

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- g. DOI artikel (Jika ada) : 10.3389/conf.fphar.2018.63.00095
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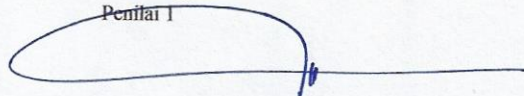
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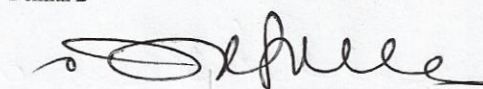
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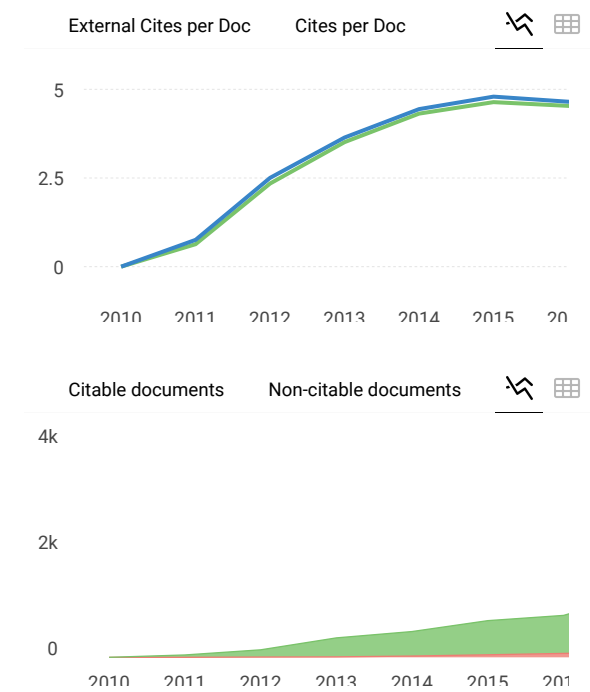
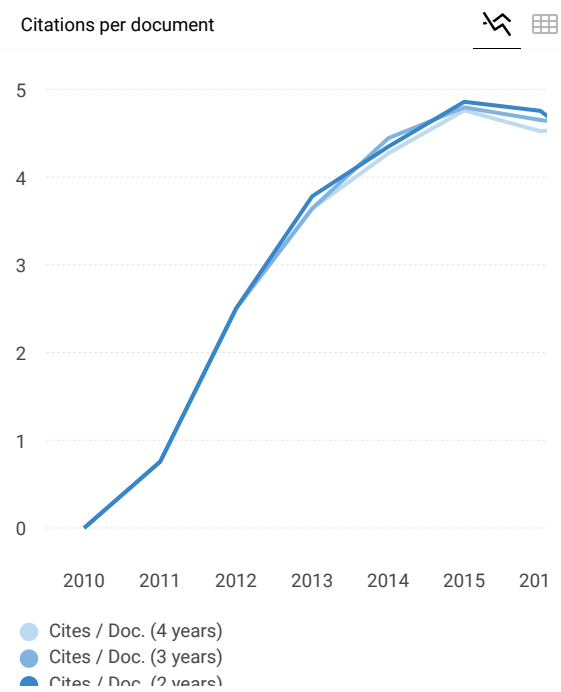
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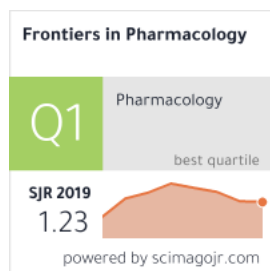
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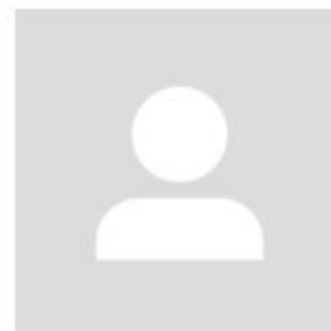
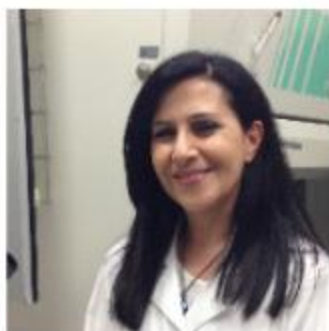
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Association of hair total mercury with serum ferritin level among Indonesian pregnant woman: a preliminary study

Muflihatul Muniroh^{1*}, Saekhol Bakri², Ainun R. Gumay¹, Julian Dewantiningrum³, Mulyono Mulyono³ and Hardian Hardian¹

¹ Department of Physiology, Faculty of Medicine Diponegoro University, Indonesia

² Departement of Public Health, Faculty of Medicine Diponegoro University, Indonesia

³ Department of Pediatrics, Faculty of Medicine Diponegoro University, Indonesia

Background

The exposure of Hg in pregnant women is an important issue since it can pass the placental blood barrier and affect to fetus. This study's aim is to investigate the correlation between hair total mercury level with serum ferritin concentration in pregnancy mother to know whether Hg exposure may affect iron deficiency that have harmful effect in pregnancy.

Methods

This is quantitative study with cross-sectional method design. Samples were 26 (from total 201 sample) pregnant mother from 11 community health centers in Semarang, Central Java, Indonesia. Hg level from about 0.5mg of scalp hair was measured using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) method. Ferritin level was determined from serum blood using quantitatively spectrophotometry.

Results

As a preliminary result, total mercury (T-Hg) was determined from 26 hair sample of pregnant women, with mean level was 0.581 ± 0.288 (min-max: 0.009-1.204) mg/L. Serum ferritin mean level was 19.426 ± 11.301 ng/mL (min-max: 2.54-52.51). Then ferritin was categorized as low level group <12 ng/mL (n=5), normal >12 ng/mL (n=21), and tested using Mann-Whitney U test. The result showed significant different between hair T-Hg level and serum ferritin (p=0.01) among pregnant women. Using correlation Spearman test, we found moderate correlation between increased hair T-Hg level and lower serum ferritin (p=0.07, with r= -0.514). Subjects with T-Hg >0.7075 mg/L had risk to have lower serum ferritin 8.0 x (95%CI=1.6-40.2).

Conclusion

The increased hair total mercury level is correlated with lower serum ferritin, indicating that mercury may affect an iron deficiency status in pregnant women.

Acknowledgements

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