Pengaruh asupan lipid-protein dan polimorfisme sex hormone binding globulin (SHBG) terhadap kadar SHBG pada pria Indonesia dan Kaukasia.

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Abstrak

Ruang Lingkup dan Cara Penelitian: Penggunaan testosteron enantat (TE) saja atau kombinasinya dengan depot medroksiprogesteron asetat (TE + DMPA) atau testosteron undekanoat (TU) saja dalam kontrasepsi hormon memiliki efektivitas yang berbeda dalam menekan spermatogenesis antara bangsa Asia dengan Kaukasia. Perbedaan efektivitas penekan spermatogenesis tersebut mungkin disebabkan oleh perbedaan asupan lipid-protein dan polimorfisme SHBG. Tujuan penelitian ini untuk mengetahui pengaruh perbedaan asupan lipid-protein dan polimorfisme SHBG terhadap kadar SHBG, testosteron total, testosteron bebas antara pria Indonesia dengan pria Kaukasia. Selain itu juga ingin diketahui hubungan antara kadar SHBG, testosteron total, testosteron bebas, persentase testosteron bebas, indeks testosteran bebas dan insulin. Penelitian ini merupakan studi potong lintang. Food recall 3 hari berturut-turut dilakukan terhadap semua subyek, kemudian dianalisis dengan World Food 2 Program. Kadar SHBG, testosteron total, testosteron bebas dan insulin dalam serum diukur dengan metoda radio immuno assay (RIA). Elektroforesis dan western blotting dilakukan untuk menentukan macam fenotip SHBG. Subyek penelitian dibagi menjadi 3 kelompok berdasarkan asupan lipid-protein dan dibagi menjadi 2 kelompok berdasarkan fenotip SHBG. Tiga puluh sembilan pria Indonesia asupan lipid-protein rendah sebagai kelompok I, 28 pria Indonesia asupan lipid-protein sedang sebagai kelompok II dan 27 pria Kaukasia asupan lipid-protein tinggi sebagai kelompok III. Tujuh puluh enam dari 94 subyek penelitian fenotipnya SHBG normal (2 pita SHBG) dan 18 dari 94 subyek penelitian fenotipnya SHBG varian (3 pita SHBG).

Hasil dan Kesimpulan: Kadar SHBG dan testosteron bebas kelompok I lebih tinggi dibanding kelompok II dan III, tetapi kelompok 1I tidak berbeda dengan kelompok III. Kadar testosteron total kelompok I lebih tinggi dibanding kelompok III dan kelompok II paling rendah. Karena kadar SHBG, testosteron total dan testosteron bebas antar kelompok berbeda ($p < 0.05$), maka kadar SHBG, testosteron total dan testosteron bebas dipengaruhi oleh asupan lipid-protein. Kadar SHBG, testosteron total dan testosteron bebas antara fenotip SHBG normal tidak berbeda dengan fenotip SHBG Marian ($p > 0.05$). Karena kadar SHBG, testosteron total dan testosteron bebas antar kelompok fenotip SHBG tidak berbeda, maka kadar SHBG, testosteron total dan testosteron.

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The Influence Of Lipid-Protein Intakes And SHBG Polimorphysm On SHBG Level Of Indonesian And Caucasian MenScope and Methods of study: The development of hormonal contraception method for men using testosterone enanthate (TB) alone or in combination with depot medroxyprogesteron acetate (TE + DMPA) or testosterone undecanoat (TU) alone has different efficacy in suppressing the spermatogenesis of Asians or Caucasians. The difference of efficacy in suppressing the spermatogenesis of Asian or Caucasian maybe caused by the difference of lipid-protein intake and SHBG polymorphism. The main aim of this research was to investigate the effects of difference in lipid-protein intake and polymorphism of SHBG on

the level of SHBG, total testosterone and free testosterone of Indonesian men with low lipid-protein intake, medium lipid-protein intake and Caucasian men with high lipid-protein intake. This research was cross sectional study. Three days repeated food recall for all subjects analyzed with World Food 2 Program. The measurement of serum SHBG, total testosterone, free testosterone and insulin were done with radio immuno assay (RIA) technique. Electrophoresis and western blotting were done to determine 2 types of SHBG phenotype. Subjects in this research were divided into 3 groups base on lipid-protein intake and 2 groups base on SHBG phenotype. Thirty nine Indonesian men with low lipid-protein intake as group I, 28 Indonesian men with medium lipid-protein intake as group II and 27 Caucasian men with high lipid-protein intake as group III. Seventy six out of 94 subjects as normal SHBG phenotype (double-banded SHBG) and I8 out of 94 subjects as variant SHBG phenotype (triple-banded SHBG).

Result and conclusion: The level of SHBG and free testosterone in the group I was higher compared to both group II and group III (p r 0.05), but the group II and group III was not different ($p > 0.05$). The level of total testosterone in the group I was higher compared to group ill, and the group II was the lowest ($p < 0.05$). Because the level of SHBG, total testosterone and free testosterone in the group I, II and III were different ($p < 0.05$), then they were affected by lipid-protein intake. The level of SHBG in the normal SHBG phenotype was not different compared to the variant SHBG phenotype ($p > 0.05$), then the level of SHBG was not affected by SHBG polymorphism.