Prediktor Disfungsi Dasar Panggul Setelah Persalinan Pervaginam Menggunakan Penanda Metabolit Kolagen dan Elastin Serum = Predictors of Pelvic Floor Dysfunction After Vaginal Delivery Using Collagen Metabolites and Serum Elastin Markers

Tyas Priyatini, author

Abstrak

Disfungsi dasar panggul adalah komplikasi persalinan per vaginam dengan manifestasi utama prolaps organ panggul (POP), inkontinensia urin dan inkontinensia fekal sehingga menurunkan kualitas hidup. Diduga terdapat peran jaringan ikat kolagen dan elastin, namun biopsi berulang memiliki risiko perdarahan, nyeri serta infeksi. Oleh karena itu, dipikirkan produk metabolitkolagen dan elastin serum untuk mewakili kadar kolagen dan elastin di jaringan penunjang dasar panggul. Tujuan penelitian ini adalah mendapatkan penanda serum produk metabolit kolagen dan elastin untuk memprediksi disfungsi dasar panggul setelah persalinan per vaginam.

Penelitian tahap pertama menggunakan desain prospektif kohort satu sisi untuk mengukur angka kejadian disfungsi dasar panggul 3 bulan setelah persalinan. Penelitian dilakukan di Poliklinik Obstetri Departemen Obstetri dan Ginekologi FKUI/RSUPN dr.Cipto Mangunkusumo dan Puskesmas di lingkungan DKI Jakarta, selama periode Januari 2015 sampai Juli 2019. Tahap kedua menggunakan desain nested case control untuk menganalisis hubungan penanda serum kolagen dan elastin serta aktivitas MMP-9 pada kehamilan dan setelah persalinan dengan disfungsi dasar panggul. Penanda metabolit kolagen dan elastin (ICTP, desmosin), remodeling kolagen dan elastin (PINP, PIIINP, tropoelastin), serta MMP-9 diukur pada saat hamil, 24–48 jam, dan 6 minggu setelah persalinan. Tiga bulan setelah persalinan, inkontinensia urin, tekanan dan POP dinilai berdasarkan gejala, pemeriksaan POP-Q dan tes batuk. Data luaran sebelum dan sesudah persalinan dianalisis dengan uji t tidak berpasangan dan uji Mann Whitney.

Dari 177 calon subjek, 4 subjek dieksklusi dan 113 subjek drop out. Dari 60 subjek yang diinklusi, 38 (63,3%) mengalami POP derajat 2 dan 25 subjek di antaranya (41,7%) mengalami sistokel derajat 2. Tidak ada perbedaan rerata seluruh marker degradasi dan sintesis kolagen 1,3 dan elastin serta MMP-9 antara kelompok POP dan kontrol. Analisis dilakukan dengan analisis kategorik menggunakan titik potong pada variabel yang memiliki AUC > 0.6. Pada hasil analisis bivariat prolaps organ panggul didapatkan hasil yang bermakna adalah yang memiliki nilai variabel p < 0,05 yaitu PINP setelah persalinan dan ICTP setelah persalinan. Setelah itu, dilakukan analisis multivariat dengan mengambil nilai variabel p < 0,25 ditemukan pada biomarker PINP setelah persalinan 106,9 dengan RR = 1,76 (95%CI: 1,14–3,00). Pada hasil analisis bivariat sistokel didapatkan hasil yang bermakna adalah yang memiliki nilai variabel p < 0,05 yaitu PINP kehamilan dan PINP setelah persalinan. Setelah itu, dilakukan analisis multivariat sistokel dengan menggambil nilai variabel p < 0.25 yaitu ditemukan biomarker PINP setelah persalinan 106,9 dengan RR = 2,53 (95%CI: 1,05–6,09).

.....Pelvic floor dysfunction is a complication of vaginal delivery with the main manifestations of pelvic organ prolapse (POP), urinary incontinence and fecal incontinence, thereby reducing quality of life. It is suspected that there is a role for collagen and elastin connective tissue, but repeated biopsies carry the risk of bleeding, pain and infection. Therefore, it was considered the metabolic products of serum collagen and

elastin to represent the levels of collagen and elastin in the pelvic floor supporting tissues. The aim of this study was to obtain serum markers of collagen and elastin metabolism products to predict pelvic floor dysfunction after vaginal delivery.

The first phase of the study used a one-sided prospective cohort design to measure the incidence of pelvic floor dysfunction 3 months after delivery. The study was conducted at the Obstetrics Polyclinic, Department of Obstetrics and Gynecology, FKUI/RSUPN dr. Cipto Mangunkusumo and Puskesmas in DKI Jakarta, during the period January 2015 to July 2019. The second phase used a nested case control design to analyze the relationship between serum collagen and elastin markers and MMP-9 activity in pregnancy and after delivery with pelvic floor dysfunction. Markers of collagen and elastin metabolism (ICTP, desmosin), collagen and elastin remodeling (PINP, PIIINP, tropoelastin), and MMP-9 were measured during pregnancy, 24–48 hours, and 6 weeks after delivery. Three months after delivery, urinary incontinence, pressure and POP were assessed on the basis of symptoms, POP-Q examination and cough test. The outcome data before and after delivery were analyzed by unpaired t test and Mann Whitney test.

From 177 prospective subjects, 4 subjects were excluded and 113 subjects dropped out. Of the 60 included subjects, 38 (63.3%) had grade 2 POP and 25 (41.7%) had grade 2 cystocele. There was no difference in the mean of all markers of degradation and synthesis of collagen 1,3 and elastin and MMP-9 between the POP and control groups. The analysis was carried out by categorical analysis using cut points on variables that had AUC > 0.6. In the bivariate analysis of pelvic organ prolapse, significant results were obtained which had a variable value of $p < 0.05$, there were PINP after delivery and ICTP after delivery. After that, multivariate analysis was carried out by taking the variable value $p < 0.25$ it was found in PINP biomarkers after delivery 106.9 with RR = 1.76 (95% CI: 1,14–3,00). In the results of bivariate cystocele analysis, significant results were obtained which had a variable value of $p < 0.05$, there were PINP during pregnancy and PINP after delivery. After that, multivariate analysis of cystocele was carried out by taking the value of the variable $p < 0.25$, it was found in PINP biomarkers after delivery 106.9 with RR = 2.53 (95% CI: 1,05–6,09).