

Prevalensi inkontinensia urin jenis tekanan pada primigravida trimester III akhir dan hubungannya dengan profil pergerakan uretra dan leher kandung kemih melalui pencitraan ultrasonografi = The prevalence of stress urinary incontinence in primigravid during late third trimester and its relationship with the mobility profile of urethra and bladderneck using ultrasound imaging

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#### Abstrak

Latar Belakang: Inkontinensia urin tipe tekanan (IUT) merupakan gangguan uroginekologi yang relatif sering ditemukan pada ibu hamil. Perubahan anatomic, hormonal dan jaringan yang dialami oleh perempuan hamil membuatnya rentan untuk mengalami IUT. IUT secara signifikan dapat mengganggu kualitas hidup ibu hamil. Studi tentang prevalensi IUT telah dilakukan di Indonesia tetapi sampai saat ini belum ada penelitian yang menilai prevalensinya pada perempuan primigravida trimester ketiga akhir yang cenderung lebih rentan mengalami kondisi SUI persisten postpartum. Selain itu, penelitian tentang parameter ultrasonografi (USG) pada pasien IUT pada ibu hamil belum dilakukan di Indonesia. Studi tersebut penting untuk mengetahui prevalensi IUT pada perempuan primigravida akhir trimester ketiga serta hubungan kondisi IUT dengan parameter USG untuk mobilitas leher kandung kemih.

Tujuan: Tujuan dari penelitian ini adalah untuk mengetahui prevalensi IUT pada perempuan primigravida trimester ketiga akhir di Jakarta, Indonesia selama periode 1 November 2016 sampai 31 Juli 2019. Penelitian ini juga mengidentifikasi pasien karakteristik yang secara signifikan berkorelasi dengan IUT. Selanjutnya, penelitian ini menguji korelasi antara parameter USG yang terdiri dari penurunan leher kandung kemih (BND), sudut retrovesikal (RVA), sudut rotasi uretra (RoU), dan funneling dengan IUT pada pasien tersebut.

Metode: Penelitian ini merupakan bagian dari penelitian besar mengenai penggunaan USG dasar panggul pada perempuan dengan berbagai jenis disfungsi dasar panggul di DKI Jakarta. Sebagian data merupakan data sekunder dari penelitian besar sementara sebagian lainnya dikumpulkan oleh peneliti. Penelitian ini menggunakan metode cross-sectional untuk menemukan prevalensi IUT pada perempuan primigravida trimester ketiga akhir di DKI Jakarta. Kemudian, penelitian <em>cross-sectional komparatif dilakukan untuk pengukuran parameter USG berupa BND, RVA, RoU dan funneling. Diagnosis IUT dilakukan melalui anamnesis, pemeriksaan fisik, serta Kuesioner Diagnosis Inkontinensia Urin (QUID) dan tes batuk stres. Sebanyak 30 subjek yang terdiagnosis IUT dan 30 subjek tanpa IUT yang memenuhi kriteria penelitian dipilih dan dikumpulkan datanya dengan formulir dan database penelitian. Data awalnya dikumpulkan dalam perangkat lunak Microsoft Excel dan kemudian diperiksa dan diberi kode untuk dianalisis dalam SPSS versi 25 untuk Mac. Data kategoris disajikan sebagai frekuensi (persentase) sedangkan data numerik kontinu disajikan sebagai mean + standar deviasi untuk data yang terdistribusi normal serta median (rentang) untuk data yang tidak berdistribusi normal. Signifikansi statistik dinyatakan sebagai 0,05. Analisis kurva karakteristik receiver-operator digunakan untuk mendapatkan nilai cut-off BND, RVA, dan RoU yang secara signifikan berhubungan dengan IUT antara sensitivitas dan spesifisitasnya. Analisis bivariat dilakukan untuk membandingkan faktor risiko IUT yang signifikan secara

statistik. Pearson chi-square atau uji eksak Fisher digunakan untuk analisis bivariat kategoris sementara uji T tidak berpasangan atau Mann Whitney digunakan untuk analisis perbedaan rerata. Analisis multivariat menggunakan regresi logistik kemudian dilakukan untuk mengidentifikasi faktor risiko independen IUT dan untuk mendapatkan rasio odds yang disesuaikan dari prediktor.

Hasil: dari 209 perempuan primigravida trimester ketiga akhir, inkontinensia urin tipe tekanan diamati pada 57 pasien, sehingga prevalensinya sebesar 27,3%. Faktor risiko IUT yang teridentifikasi adalah indeks massa tubuh (IMT) lebih dari 23 kg/m<sup>2</sup> ( $P=0,037$ ), RVA lebih dari 155,020 ( $P=0,002$ ), serta adanya funneling pada USG translabial. Nilai rerata BND ( $1,78 + 0,64$  cm) dan rerata RVA ( $158,04 + 14,460$ ) secara signifikan lebih tinggi dibandingkan kelompok non-IUT, dengan  $P=0,044$  dan  $P=0,001$ . Sedangkan nilai rerata RoU tidak berbeda bermakna dengan non-IUT. Nilai cut-off untuk BND, RVA, dan RoU yang digunakan untuk mengkategorikan pasien berisiko tinggi masing-masing adalah 1,77 cm, 155,020, dan 27,830. Pada analisis multivariat, hanya IMT ( $P=0,05$ , aOR 3,73) dan funneling positif ( $P=0,03$ , aOR 4,3) yang terbukti sebagai faktor risiko independen IUT. Prevalensi IUT di antara primigravida trimester ketiga akhir lebih rendah dibandingkan penelitian lain. Faktor risiko IUT yang diidentifikasi dengan data ini sesuai dengan penelitian sebelumnya baik di Indonesia maupun di luar negeri.

Kesimpulan: Prevalensi IUT di antara primigravida trimester ketiga akhir adalah 27,3% dan diperoleh mean serta nilai batas untuk parameter USG BND, RVA dan RoU untuk pasien tersebut. Hanya funneling positif serta IMT yang terbukti menjadi faktor risiko independen IUT.

.....Background: Stress urinary incontinence is a relatively common urogynecological disorder in a pregnant women. The gross anatomical as well as hormonal and tissue changes encountered by pregnant women posed themselves prone to acquire SUI. SUI can significantly disrupts pregnant women's quality of life. Studies about the prevalence of SUI have been conducted in Indonesia but up to now, there is no study assessing its prevalence on late third trimester primigravid women which are likely more prone to have persistent condition after the delivery. Besides, study about the ultrasound parameters in SUI patients among pregnant women has not been conducted in Indonesia.

Purpose: The aim of this study is to find the prevalence of SUI among late third trimester primigravid women in Jakarta, Indonesia during the period of November, 2016 until July, 2019. This study also attempts to identify the patients' characteristics that significantly correlate with SUI. Furthermore, this study examines the correlation between ultrasound parameters comprising of bladder neck descent (BND), retrovesical angle (RVA), rotational of urethra (RoU), and funneling with SUI in such patients.

Method: This study is part of a study about the utilization of pelvic ultrasonography for patients with various pelvic floor dysfunction in the Greater Jakarta region. Some parts of the data were secondary data obtained from the main studies while the rest were collected by the author herself. This study employs a descriptive-observational cross-sectional method for the investigation of SUI prevalence in the late third trimester primigravid women from the cohort. Furthermore, a comparative cross-sectional study was conducted involving a total of 60 subjects which were equally divided into two groups, the SUI group and non-SUI group. The diagnosis of SUI was conducted through history taking, physical examination, as well as Questionnaire for Urinary Incontinence Diagnosis (QUID) and stress cough test. The subjects of each group were consecutively selected from the cohort and their anthropological, clinical, as well as recent BND, RVA, RoU and funneling data from ultrasound records were collected. Data were initially collected in a Microsoft Excel software and then were checked and coded to be analyzed in SPSS version 25 for Mac. Categorical data were presented as number (percentage) while continuous numeric data were presented as

mean + standard deviation for normally distributed data as well as median (range) for data with no normal distribution. Statistical significance was stated as 0,05. A receiver-operator characteristics curve analysis was employed to obtain the cut-off value of BND, RVA, and RoU which were significantly associated with SUI among with their sensitivity and specificity. Bivariate analysis was conducted to compare the statistically significant risk factors of SUI. Pearson chi-square or Fisher exact test were used for categorical bivariate analysis while unpaired T-test or Mann Whitney were used for mean difference analysis. Multivariate analysis using logistic regression were then conducted to identify the independent predictors of SUI and to obtain the adjusted odds ratio of the predictors.

Results: from 209 late third trimester primigravid women, stress urinary incontinence was observed in 57 patients, giving the prevalence of 27,3%. The identified risk factors of SUI were a body mass index more than  $23 \text{ kg/m}^2$  ( $P=0,037$ ), RVA of more than 155,02 degrees ( $P=0,002$ ), as well as the presence of funneling in the translabial ultrasound. The mean value of BND ( $1,78 + 0,64 \text{ cm}$ ) as well as mean RVA ( $158,04 + 14,46 \text{ degrees}$ ) were significantly higher than that of control group, with  $P=0,044$  and  $P=0,001$  respectively. Meanwhile, mean RoU value were not significantly different with control. The cut-off value for BND, RVA, and RoU which were used to categorize patient as high-risk were 1,77 cm, 155,02 degrees, as well as 27,83 degrees respectively. In the multivariate analysis, only BMI ( $P=0,05$ , aOR 3,73) and positive funneling ( $P=0,03$ , aOR 4,3) which were shown to be independent predictors of SUI. The prevalence of SUI among late third trimester primigravid were lower than that of other studies. The risk factors of SUI identified with this data were in accordance with the other previous studies from Indonesia as well as overseas.

Conclusion: The prevalence of SUI among the cohort of late third trimester primigravid was 27.3 percent and the mean as well as cut-off values for ultrasound parameter of BND, RVA and RoU for such patients were obtained. Only positive funneling as well as BMI were shown to be the independent risk factors of SUI.