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Hubungan Makula Fitzpatrick dengan Karakteristik Klinis Melasma
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INTISARI

Pendahuluan: Melasma merupakan kelainan hiperpigmentasi kronik pada wajah yang terutama dijumpai pada perempuan dan individu dengan fototipe kulit lebih gelap. Patogenesisnya bersifat multifaktorial dan melibatkan paparan radiasi ultraviolet, faktor hormonal, serta perubahan mikrolingkungan kulit yang dapat menimbulkan distribusi pigmentasi tidak homogen dalam lesi melasma. Salah satu manifestasi klinisnya adalah makula Fitzpatrick atau *confetti-like sparing*, yaitu pulau kecil kulit yang relatif mempertahankan pigmentasi normal di antara area hiperpigmentasi. Makula Fitzpatrick selama ini terutama diteliti sebagai tanda diagnostik melasma, sedangkan variasi jumlahnya berdasarkan karakteristik klinis melasma belum banyak diketahui.

Tujuan: Menilai perbedaan jumlah makula Fitzpatrick berdasarkan pola distribusi dan tipe kedalaman pigmentasi serta mengetahui hubungannya dengan derajat keparahan melasma.

Metode: Penelitian potong lintang dilakukan terhadap 39 perempuan dengan melasma di Yogyakarta. Jumlah makula Fitzpatrick dihitung pada foto klinis terstandar menggunakan ImageJ. Pola distribusi ditentukan berdasarkan pemeriksaan klinis, tipe kedalaman dinilai menggunakan lampu Wood, dan derajat keparahan dinilai menggunakan MASI. Perbedaan jumlah makula Fitzpatrick berdasarkan pola distribusi dan tipe kedalaman dianalisis menggunakan uji Mann–Whitney U, sedangkan hubungannya dengan derajat keparahan dianalisis menggunakan uji korelasi Spearman. Variabel perancu potensial dengan nilai p<0,25 pada analisis bivariat dimasukkan ke dalam analisis multivariat menggunakan regresi logistik biner untuk pola distribusi dan tipe kedalaman, serta regresi linear untuk derajat keparahan.

Hasil: Reliabilitas penghitungan makula sangat baik (ICC=0,999). Median jumlah makula pada pola *centrofacial* lebih tinggi dibandingkan malar, yaitu 15 (IQR 25) dan 5 (IQR 9,5), dengan perbedaan bermakna (p=0,039). Median jumlah makula pada pigmentasi dengan komponen dermal dan pigmentasi terbatas epidermal masing-masing 7,0 (IQR 22) dan 5,5 (IQR 11), tanpa perbedaan bermakna (p=0,145). Jumlah makula berkorelasi positif kuat dengan derajat keparahan melasma (r_s=0,778; p<0,001). Variabel perancu potensial tidak menunjukkan hubungan independen yang bermakna dengan karakteristik klinis melasma.

Kesimpulan: Terdapat perbedaan jumlah makula Fitzpatrick pada melasma pola *centrofacial* dan malar. Tidak terdapat perbedaan jumlah makula Fitzpatrick yang bermakna pada melasma tipe pigmentasi terbatas epidermal dan tipe pigmentasi dengan komponen dermal. Jumlah makula Fitzpatrick berkorelasi positif kuat dengan derajat keparahan melasma sehingga semakin banyak jumlah makula Fitzpatrick maka semakin berat derajat keparahan melasma.

Kata kunci: makula Fitzpatrick, *confetti-like sparing*, melasma, karakteristik klinis, MASI

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ABSTRACT

Background: Melasma is a chronic facial hyperpigmentation disorder that predominantly affects women and individuals with darker skin phototypes. Its pathogenesis is multifactorial, involving ultraviolet radiation exposure, hormonal factors, and alterations in the cutaneous microenvironment that may result in heterogeneous pigmentation within melasma lesions. One of its clinical manifestations is the Fitzpatrick macule, also known as *confetti-like sparing*, which refers to small islands of skin with relatively preserved normal pigmentation within hyperpigmented areas. Fitzpatrick macules have primarily been investigated as a diagnostic feature of melasma, whereas variations in their number according to the clinical characteristics of melasma remain poorly understood.
Objective: To evaluate differences in Fitzpatrick macule counts according to the clinical distribution pattern and pigmentation depth and to determine their relationship with melasma severity.
Methods: This cross-sectional study included 39 women with melasma in Yogyakarta. Fitzpatrick macules were counted on standardized clinical photographs using ImageJ. Clinical distribution patterns were determined through clinical examination, pigmentation depth was assessed using a Wood's lamp, and severity was evaluated using the Melasma Area and Severity Index (MASI). Differences in Fitzpatrick macule counts according to distribution pattern and pigmentation depth were analyzed using the Mann–Whitney U test, whereas their relationship with melasma severity was assessed using Spearman's rank correlation. Potential confounding variables with $p<0.25$ in the bivariate analysis were included in multivariable analyses using binary logistic regression for distribution pattern and pigmentation depth and linear regression for melasma severity.
Results: The reliability of Fitzpatrick macule counting was excellent (ICC=0.999). The median macule count was significantly higher in the *centrofacial* pattern than in the malar pattern, at 15 (IQR 25) and 5 (IQR 9.5), respectively ($p=0.039$). The median macule counts for pigmentation with a dermal component and epidermal-restricted pigmentation were 7.0 (IQR 22) and 5.5 (IQR 11), respectively, with no significant difference ($p=0.145$). Fitzpatrick macule count showed a strong positive correlation with melasma severity ($r_s=0.778$; $p<0.001$). Potential confounding variables were not independently associated with the clinical characteristics of melasma.
Conclusion: Fitzpatrick macule counts differed between *centrofacial* and malar pattern of melasma. No significant difference in Fitzpatrick macule counts was observed between epidermal-restricted pigmentation and pigmentation with a dermal component. The number of Fitzpatrick macules showed a strong positive correlation with melasma severity, indicating that a higher number of Fitzpatrick macules was associated with more severe melasma.

Keywords: Fitzpatrick macule, *confetti-like sparing*, melasma, clinical characteristics, MASI