

INTISARI

GAMBARAN KLINIKOPATOLOGIS DAN EKSPRESI *p16^{INK4a}* PADA KUTIL ANOGENITAL PRIA DI YOGYAKARTA

Cindy Rizqita Putri¹, Hanggoro Tri Rinonce², Indrawarman³

¹Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada, Yogyakarta

²Departemen Patologi Anatomi Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada - RSUP Dr. Sardjito, Yogyakarta

Latar Belakang: Kutil anogenital merupakan salah satu manifestasi infeksi *human papillomavirus* (HPV) yang umum pada pria dan masuk dalam tiga besar penyakit menular seksual di Indonesia. HPV risiko rendah (HPV 6, 11) umumnya jinak, sedangkan HPV risiko tinggi (HPV 16, 18) dapat menimbulkan lesi prakanker hingga kanker. Ekspresi *p16^{INK4a}* diketahui sebagai biomarker yang mencerminkan potensi onkogenik HPV, namun penelitian terkait di Indonesia masih terbatas.

Tujuan: Penelitian ini bertujuan untuk mengetahui gambaran karakteristik klinikopatologis, menilai frekuensi ekspresi *p16^{INK4a}*, serta menganalisis hubungan keduanya pada pasien kutil anogenital pria di Yogyakarta

Metode: Penelitian ini merupakan studi observasional-analitis retrospektif dengan desain potong lintang pada pasien kutil anogenital pria di RSUP Dr. Sardjito Yogyakarta tahun 2017–2024. Data klinikopatologis diperoleh dari instalasi catatan medis, sedangkan penilaian ekspresi *p16^{INK4a}* dilakukan melalui pewarnaan imunohistokimia pada jaringan *formalin fixed paraffin-embedded* (FFPE). Analisis data dilakukan menggunakan uji Chi-Square, Fisher's Exact Test, dan Monte Carlo.

Hasil: Hasil penelitian ini menunjukkan bahwa sebagian besar pasien KA berusia 25-34 tahun (40,4%), dengan lesi terbanyak pada area anal (80,9%). Mayoritas pasien terinfeksi HIV (78,7%), memiliki multiple sexual partners (61,7%), berorientasi heteroseksual (31,9%), melakukan aktivitas seksual secara genital-oral-anal (23,4%), serta menggunakan kondom secara inkonsisten (42,6%). Mayoritas memulai hubungan seksual di usia dewasa muda (34%) dan sirkumsisi pada usia anak (46,8%). Ekspresi *p16^{INK4a}* didominasi hasil negatif (72,3%). Analisis menunjukkan hubungan signifikan antara ekspresi *p16^{INK4a}* dengan jenis aktivitas seksual (genital-oral) ($p < 0,005$), sedangkan dengan variabel lain tidak bermakna.

Kesimpulan: Terdapat 13 pasien (27,7%) dengan ekspresi *p16^{INK4a}* positif. Ekspresi *p16^{INK4a}* positif mengindikasikan adanya potensi lesi berkembang menjadi keganasan.

Kata Kunci: *p16^{INK4a}*, genotipe HPV, blok parafin, infeksi virus, condyloma Acuminata

ABSTRACT

CLINICOPATHOLOGICAL FEATURES AND EXPRESSION OF *p16^{INK4a}* IN MALE ANOGENITAL WARTS IN YOGYAKARTA

Cindy Rizqita Putri¹, Hanggoro Tri Rinonce², Indrawarman³

¹Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University, Yogyakarta
Department of Anatomical Pathology, Dr. Sardjito General Hospital, Yogyakarta

²Department of Anatomical Pathology, Faculty of Medicine, Public Health, and Nursing,
Universitas Gadjah Mada-Dr. Sardjito Hospital, Yogyakarta, Indonesia

Background: Anogenital warts are a common manifestation of human papillomavirus (HPV) infection in men and rank among the top three sexually transmitted infections in Indonesia. Low-risk HPV types (HPV 6, 11) are generally benign, whereas high-risk HPV types (HPV 16, 18) can cause precancerous lesions and progress to cancer. The expression of *p16^{INK4a}* is recognized as a biomarker reflecting the oncogenic potential of HPV; however, related studies in Indonesia remain limited.

Objective: This study aimed to describe the clinicopathological characteristics, assess the frequency of *p16^{INK4a}* expression, and analyze their association in male patients with anogenital warts in Yogyakarta.

Methods: This was a retrospective observational-analytical cross-sectional study on male patients with anogenital warts treated at Dr. Sardjito General Hospital, Yogyakarta, from 2017 to 2024. Clinicopathological data were obtained from medical records, while *p16^{INK4a}* expression was evaluated through immunohistochemical staining on formalin-fixed paraffin-embedded (FFPE) tissues. Data analysis was performed using Chi-Square, Fisher's Exact Test, and Monte Carlo methods.

Results: Most patients were 25–34 years old (40.4%), with the anal region being the most frequent lesion site (80.9%). The majority were HIV-positive (78.7%), had multiple sexual partners (61.7%), identified as heterosexual (31.9%), engaged in genital-oral-anal sexual activity (23.4%), and reported inconsistent condom use (42.6%). Most initiated sexual activity in early adulthood (34%) and underwent circumcision during childhood (46.8%). Negative *p16^{INK4a}* expression predominated (72.3%). A significant association was found between *p16^{INK4a}* expression and type of sexual activity (genital-oral) ($p < 0.005$), while no significant associations were observed with other variables.

Conclusion: Thirteen patients (27.7%) demonstrated positive *p16^{INK4a}* expression, indicating the potential for lesions to progress toward malignancy.

Keywords: *p16^{INK4a}*, HPV genotype, paraffin block, viral infection, condyloma acuminata