

Proporsi *Pneumocystis Jirovecii* Pada Pasien Terduga Kanker Paru Yang Menjalani Bronkoskopi Di Rumah Sakit Persahabatan Pusat Respirasi Nasional Jakarta Periode 2022-2023 = Proportion Of *Pneumocystis Jirovecii* In Suspected Lung Cancer Patients Undergoing Bronchoscopy At Persahabatan Hospital National Respiratory Center Jakarta For The Period 2022-2023

Widya Tria Kirana, author

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Abstrak

Latar Belakang: *Pneumocystis jirovecii* (*P. jirovecii*) adalah patogen jamur oportunistik yang dapat terdeteksi di saluran napas bawah. Kolonisasi *P. jirovecii* dapat berkembang menjadi infeksi yang disebut sebagai *pneumocystis pneumonia* (PCP). Infeksi PCP umumnya terdeteksi di pasien HIV. Pasien tanpa HIV juga dapat mengalami infeksi PCP terutama pada pasien keganasan. Penelitian ini bertujuan untuk mendeteksi kolonisasi *P. Jirovecii* pada sampel bilasan bronkus dengan pemeriksaan *polymerase chain reaction* (PCR). Metode: Penelitian ini merupakan penelitian potong lintang dengan deskriptif analitik yang pada pasien terduga kanker paru di RSUP Persahabatan. Subjek penelitian adalah pasien terduga kanker paru yang akan menjalani bronkoskopi sesuai kriteria inklusi. Sampel bilasan bronkus dikirim ke Laboratorium Departemen Parasitologi FKUI untuk ekstraksi DNA dan laboratorium BRIN untuk pemeriksaan PCR konvensional. Penelitian ini menggunakan gen *MtLSU* dan *mTSSU*. Hasil: Pada penelitian ini terdapat 72 subjek penelitian. Subjek penelitian terdiri atas 51 laki-laki (70,8%). Rerata usia subjek penelitian adalah 56,6 (9,95) tahun. Subjek penelitian sebagian besar memiliki IMT normal (18,5-22,9 kg/m²). Subjek penelitian sebagian besar adalah perokok baik perokok aktif atau bekas perokok yaitu sebanyak 50 orang (69,4%). Sebanyak 23 orang (31,9%) diantaranya memiliki IB berat (IB >600 batang per tahun). Subjek penelitian yang memiliki riwayat pengobatan TB, baik terkonfirmasi bakteriologis maupun diagnosis klinis, sebanyak 23 orang (31,9%). Sebanyak 26 orang (36,1%) memiliki 1 komorbid sedangkan 10 orang (13,9%) memiliki lebih dari 1 komorbid. Berdasarkan pemeriksaan histopatologi atau sitologi bilasan bronkus, dari 72 subjek penelitian terdapat 50 orang (69,4%) terdiagnosis kanker paru, 15 orang (20,9%) bukan kanker paru, dan 7 orang (9,7%) belum diketahui diagnosisnya. Dari 72 sampel yang diperiksa, tidak ada yang menunjukkan hasil PCR positif (0%). Kesimpulan: Proporsi *P. Jirovecii* yang terdeteksi melalui pemeriksaan PCR pada sampel bilasan bronkus pasien terduga kanker paru sebesar 0%. Pemeriksaan PCR untuk mendeteksi *P. Jirovecii* tidak disarankan untuk pasien kanker yang baru terdiagnosis dan belum dilakukan pengobatan.

.....Background: *Pneumocystis jirovecii* (*P. jirovecii*) is an opportunistic fungal pathogen that can be detected in the human lower respiratory tract without signs or symptoms of acute pneumonia or colonization. *P. jirovecii* colonization can develop into an infection known as *pneumocystis pneumonia* (PCP). PCP infection is commonly detected in HIV patients. However, patients without HIV can also experience PCP infection, especially in malignant patients. This study aims to detect *P. Jirovecii* colonization in bronchial lavage samples using *polymerase chain reaction* (PCR). Methods: This research is a cross-sectional study with descriptive analytics on patients suspected of lung cancer at Persahabatan Hospital. The research subjects were patients with suspected lung cancer who were selected according to the

inclusion criteria. Data on clinical, radiological, laboratory and histopathological characteristics were taken from medical records. The patient will have a bronchial lavage sample taken during bronchoscopy for diagnostic purposes. The samples will be examined at the Parasitology Department Laboratory Universitas Indonesia for DNA extraction and the BRIN laboratory for PCR examination. Results: In this study there were 72 research subjects. The research subjects consisted of 51 men (70.8%). The mean age of the research subjects was 56.6 (9.95) years. Most of the research subjects had normal BMI (18.5-22.9 kg/m²). Most of the research subjects were smokers, either active smokers or former smokers, namely 50 people (69.4%). A total of 23 people (31.9%) had severe IB (IB >600 cigarettes per year). There were 23 research subjects who had a history of TB treatment, whether confirmed bacteriologically or clinically diagnosed, as many as 23 people (31.9%). A total of 26 people (36.1%) had 1 comorbid while 10 people (13.9%) had more than 1 comorbid. Based on histopathological or cytological examination of bronchial lavage, of the 72 research subjects, 50 people (69.4%) were diagnosed with lung cancer, 15 people (20.9%) had no lung cancer, and 7 people (9.7%) had no known diagnosis. Of the 72 samples examined, none showed positive PCR results (0%). Conclusion: The proportion of *P. Jirovecii* detected by conventional PCR examination in bronchial lavage samples from patients suspected of lung cancer was 0%. PCR examination to detect *P. Jirovecii* is not recommended for cancer patients who have just been diagnosed and have not received treatment.