

DETEKSI *Chlamydia trachomatis* DAN *Neisseria gonorrhoeae* DENGAN REAL-TIME PCR PADA WANITA PEKERJA SEKS DI PARANGKUSUMO YOGYAKARTA

Bombong Nurpagino¹

ABSTRAK

Latar Belakang : Infeksi Menular Seksual (IMS) merupakan masalah utama kesehatan masyarakat di seluruh dunia, mempengaruhi kualitas hidup dan menyebabkan morbiditas serta mortalitas yang serius. Tahun 2020 telah ditemukan kasus IMS di D.I Yogyakarta sebanyak 1645 penderita. Berdasarkan kelompok risiko, wanita pekerja seks menempati urutan pertama jumlah kasus penyakit infeksi menular seksual, dengan jumlah 2.575 kasus dari total 14.700 kasus antara bulan Januari hingga Maret 2023, artinya wanita pekerja seks merupakan kelompok paling berisiko menderita penyakit infeksi menular seksual. *Chlamydia trachomatis* (CT) dan *Neisseria gonorrhoeae* (NG) adalah penyebab paling umum dari penyakit IMS. Sulitnya menumbuhkan mikroorganisme *Chlamydia trachomatis* dan *Neisseria gonorrhoeae* dalam kultur, telah digantikan oleh *Nucleic Acid Amplification Test* (NAAT). *Real-time Polymerase Chain Reaction* (qPCR) adalah teknik NAAT yang memiliki sensitivitas dan spesifisitas yang unggul dibandingkan metode berbasis kultur tradisional.

Tujuan : Mengetahui insidensi infeksi *Neisseria gonorrhoeae* dan *Chlamydia trachomatis* pada wanita pekerja seks di Parangkusumo Yogyakarta dengan deteksi swab endocerviks menggunakan metode *real-time* PCR. Serta tingkat pengetahuan dan sikap wanita pekerja seks terkait infeksi menular seksual.

Metode : Penelitian ini merupakan penelitian deskriptif analitik dengan metode *cross sectional*. Penelitian dilakukan di lokalisasi pekerja seksual di Parangkusumo, Parangtritis, Bantul, DIY dan di Laboratorium Mikrobiologi FK-KMK Universitas Gadjah Mada Yogyakarta. Sebanyak 66 sampel swab endocerviks diambil dari wanita pekerja seks di lokasi tersebut. Sampel disimpan dalam *Viral Transport Medium* (VTM) pada suhu -70°C. Sampel diproses dengan metode real time PCR, spesimen endoservik diekstraksi untuk menghasilkan DNA template menggunakan *Quick-DNATM Miniprep Plus Kit*, Tahap berikutnya dilakukan pencampuran komponen PCR seperti DNA template, dNTP, Taq DNA *Polymerase*, buffer, probe dan primer (*C.trachomatis* serovar *L1* dan *N.gonorrhoeae*) dan H₂O, total campuran sebanyak 20µl. Kemudian hasil dibaca dalam bentuk kurva amplifikasi. Untuk menilai tingkat pengetahuan, responden diminta mengisi kuesioner yang sudah diuji validitas dan reliabilitasnya. Sebanyak 26 responden bersedia mengisi kuesioner terkait pengetahuan dan sikap terhadap infeksi menular seksual.

Hasil : Infeksi *Chlamydia trachomatis* terdeteksi pada 12 responden (18,2%), infeksi *Neisseria gonorrhoeae* terdeteksi pada 12 responden (18,2%), serta koinfeksi antara *Chlamydia trachomatis* dan *Neisseria gonorrhoeae* terdeteksi pada 5 orang responden (7,6%) dengan metode *real time* PCR. Tingkat pengetahuan wanita pekerja seks di Parangkusumo terkait infeksi menular seksual yaitu terdapat 12 responden (46,2%) memiliki tingkat pengetahuan baik, sebanyak 5 responden (19,2%) memiliki tingkat pengetahuan cukup dan sebanyak 9 responden (34,6%) memiliki tingkat pengetahuan kurang tentang IMS. Sikap wanita pekerja seks tentang infeksi menular seksual di Parangkusumo menunjukkan sebanyak



UNIVERSITAS
GADJAH MADA

Deteksi *Chlamydia trachomatis* dan *Neisseria gonorrhoeae* dengan real-time PCR pada wanita pekerja seks di Parangkusumo Yogyakarta

BOMBONG NURPAGINO, Prof. dr. Tri Wibawa, Ph.D, Sp.MK(K); Prof. dr. Titik Nuryastuti, M.Si, Ph.D, Sp.MK(K)

Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

25 responden (96,2%) memiliki sikap yang baik dan 1 responden (3,8%) memiliki sikap yang kurang. Tidak terdapat hubungan antara tingkat pengetahuan dan sikap responden dalam pengendalian infeksi menular seksual.

Kesimpulan : Metode *real time* PCR dapat menjadi alternatif pilihan selain metode kultur tradisional untuk deteksi *Neisseria gonorrhoeae* dan *Chlamydia trachomatis*.

Kata Kunci : infeksi menular seksual, real time PCR, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, wanita pekerja seks

¹. Mahasiswa Program Studi Pendidikan Dokter Spesialis Mikrobiologi Klinik FK-KMK UGM

DETECTION OF *Chlamydia trachomatis* AND *Neisseria gonorrhoeae* BY REAL-TIME PCR IN FEMALE SEX WORKERS AT PARANGKUSUMO YOGYAKARTA

Bombong Nurpagino¹

ABSTRACT

Background : Sexually transmitted infections (STIs) are a major public health problem worldwide, affecting quality of life and causing serious morbidity and mortality. In 2020, 1645 STI cases were found in D.I Yogyakarta. Based on risk groups, female sex workers rank first in the number of cases of sexually transmitted infections, with 2,575 cases out of a total of 14,700 cases between January and March 2023, meaning that female sex workers are the group most at risk of suffering from sexually transmitted infections. *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) are the most common causes of STIs. The difficulty of growing the microorganisms *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in culture has been replaced by the Nucleic Acid Amplification Test (NAAT). Real-time Polymerase Chain Reaction (qPCR) is a NAAT technique that has superior sensitivity and specificity compared to traditional culture-based methods.

Objective : To determine the incidence of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infections in female sex workers in Parangkusumo Yogyakarta by detecting endocervical swabs using the real time-PCR method. As well as the level of knowledge and attitudes of female sex workers regarding sexually transmitted infections.

Method : This research is a descriptive analytical study with a cross sectional method. The research was conducted at the localization of sex workers in Parangkusumo, Parangtritis, Bantul, DIY and Microbiology Laboratory of the Faculty of Medicine, Public Health, And Nursing, Gadjah Mada University, Yogyakarta. Total of 66 endocervical swab samples were taken from female sex workers at this location. Samples were stored in Viral Transport Medium (VTM) at -70°C. Samples were processed using the real time PCR method, endocervical specimens were extracted to produce template DNA using the Quick-DNA™ Miniprep Plus Kit. The next stage was mixing PCR components such as template DNA, dNTP, Taq DNA Polymerase, buffer, probe and primer (*C.trachomatis* serovar L1 and *N.gonorrhoeae*) and H₂O, total mixture of 20 µl. Then the results are read in the form of an amplification curve. To assess the level of knowledge, respondents were asked to fill out a questionnaire whose validity and reliability had been tested. A total of 26 respondents were willing to fill out a questionnaire regarding knowledge and attitudes towards sexually transmitted infections.

Results : *Chlamydia trachomatis* infection was detected in 12 respondents (18.2%), *Neisseria gonorrhoeae* infection was detected in 12 respondents (18.2%), and coinfection between *Chlamydia trachomatis* and *Neisseria gonorrhoeae* was detected in 5 respondents (7.6%) by the real-time PCR method. The level of knowledge of female sex workers in Parangkusumo about sexually transmitted infections is that there are 12 respondents (46.2%) who have a good level of knowledge, 5 respondents (19.2%) have a moderate level of knowledge and 9 respondents (34.6%) have a low level of knowledge about STIs. Behavior of female sex workers about sexually transmitted infections in Parangkusumo showed that 25



UNIVERSITAS
GADJAH MADA

Deteksi *Chlamydia trachomatis* dan *Neisseria gonorrhoeae* dengan real-time PCR pada wanita pekerja seks di Parangkusumo Yogyakarta

BOMBONG NURPAGINO, Prof. dr. Tri Wibawa, Ph.D, Sp.MK(K); Prof. dr. Titik Nuryastuti, M.Si, Ph.D, Sp.MK(K)

Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

respondents (96.2%) had a good behaviour and 1 respondent (3.8%) had a poor behaviour. There is no relationship between the level of knowledge and behavior of respondents in controlling sexually transmitted infections.

Conclusion : The real time PCR method can be an alternative choice besides traditional culture methods for the detection of *Neisseria gonorrhoeae* and *Chlamydia trachomatis*.

Keywords: sexually transmitted infections, real time PCR, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, female sex workers

¹Student of Clinical Microbiology Specialist, Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University