ABSTRAK

Di rumah sakit Indonesia, ulkus diabetik dan gangren merupakan komplikasi yang umum terjadi pada pasien diabetes. Angka kematian yang terkait dengan kondisi ini berkisar antara 17% dan 23%. Ulkus diabetik menimbulkan kekhawatiran yang signifikan karena kerentanannya terhadap infeksi dan lesi. Patogen utama yang diisolasi dari ulkus adalah Staphylococcus aureus. Dalam beberapa kasus, terapi antibiotik konvensional terbukti tidak memadai, yang mengarah pada munculnya *Methicillin-Resistant Staphylococcus aureus* (MRSA), suatu strain yang menunjukkan resistensi terhadap methicillin. Selain itu, MRSA dapat menghasilkan *Toxic Shock Syndrome Toxin-1* (TSST-1), yang mengganggu fungsi sel T dalam sistem imun, yang mengakibatkan pelepasan sitokin yang berlebihan. Penelitian ini merupakan studi deskriptif kuantitatif yang dilakukan antara Februari dan April 2024 di Laboratorium Bakteriologi dan Biologi Molekuler dalam Departemen Teknologi Laboratorium Medis, dengan menganalisis 24 sampel dari ulkus diabetik. Hasil penelitian ini didapati dari 12 sampel ulkus diabetikum dengan tingkat keparahan ringan ditemukan 11 sampel (92%) terinfeksi bakteri *Staphylococcus aureus* dan 1 sampel (8%) terinfeksi bakteri *Staphylococcus epidermidis.* Sedangkan dari 12 sampel ulkus diabetikum dengan tingkat keparahan berat ditemukan 9 sampel (75%) terinfeksi bakteri *Staphylococcus aureus* dan 3 sampel (25%) terinfeksi bakteri *Staphylococcus epidermidis*. Pada uji resistensi antibiotik didapatkan 4 sampel positif MRSA pada kriteria ulkus diabetikum tingkat keparahan berat. Uji deteksi molekuler didapatkan 1 (25 %) menunjukkan sampel terdeteksi gen TSST-1 dan 3 (75 %) sampel tidak terdeteksi gen TSST-1.

Kata Kunci : Ulkus diabetikum, *Staphylococcus aureus,* MRSA, Gen TSST-1

ABSTRACT

In Indonesian hospitals, diabetic ulcers and gangrene are prevalent complications among patients with diabetes. The mortality rate associated with these conditions ranges between 17% and 23%. Diabetic ulcers pose a significant concern due to their susceptibility to infections and subsequent lesions. A predominant pathogen isolated from these ulcers is Staphylococcus aureus. In some cases, conventional antibiotic therapies prove inadequate, leading to the emergence of Methicillin-Resistant Staphylococcus aureus (MRSA), a strain that exhibits resistance to methicillin. Additionally, MRSA can produce Toxic Shock Syndrome Toxin-1 (TSST-1), which interferes with T-cell function within the immune system, resulting in an excessive release of cytokines. This research comprises a quantitative descriptive study conducted between February and April 2024 at the Bacteriology and Molecular Biology Laboratory within the Medical Laboratory Technology Department, analyzing 24 samples from diabetic ulcers. The results in this study showed that from 12 samples of diabetic ulcers with mild severity, 11 samples (92%) were infected with Staphylococcus aureus bacteria, and 1 sample (8%) was infected with Staphylococcus epidermidis bacteria. Meanwhile, of the 12 diabetic ulcer samples with severe severity, 9 samples (75%) were found to be infected with Staphylococcus aureus bacteria and 3 samples (25%) were infected with Staphylococcus epidermidis bacteria. In the antibiotic resistance test, 4 samples were positive for MRSA according to the criteria for severe diabetic ulcers. The molecular detection test showed that 1 (25%) sample showed the TSST-1 gene was detected and 3 (75%) samples did not detect the TSST-1 gene.

Keywords: Diabetic ulcer, Staphylococcus aureus, MRSA, TSST-1 gene