ABSTRAK

Diabetes Melitus adalah peningkatan kadar glukosa darah dari rentang kadar puasa normal 80-90 mg/dl, atau rentang non puasa 140-160 mg/dl. Jika diabetes Melitus tidak cepat ditangani maka, dapat menyebabkan komplikasi seperti penglihatan kabur, penyakit jantung, penyakit ginjal, selain itu dalam jangka panjang hiperglikemia menyebabkan komplikasi neuropatik. Ulkus diabetikum merupakan komplikasi diabetes melitus yang sering disertai infeksi bakteri sehingga memerlukan terapi topikal yang efektif seperti emulgel. Daun karsen (Muntingia calabura L.) dan kayu kulit manis (Cinnamomum sp.) diketahui mengandung senyawa bioaktif berpotensi antibakteri. Penelitian ini bertujuan mengembangkan dan mengevaluasi aktivitas antibakteri emulgel kombinasi fraksi aktif kedua bahan tersebut sebagai kandidat terapi topical luka gangren. Fraksi aktif diformulasikan dalam bentuk emulgel dengan konsentrasi 10%, 30%, 50%, 60%, dan 70%. Uji antibakteri dilakukan menggunakan metode difusi agar, dengan klindamisin sebagai kontrol positif dan basis emulgel sebagai kontrol negatif. Hasil menunjukkan bahwa emulgel mulai memiliki aktivitas antibakteri pada konsentrasi 50% dengan zona hambat 12,96 mm, yang meningkat pada konsentrasi 60% dan 70% masing-masing menjadi 14,00 mm dan 15,24 mm. Konsentrasi 10% dan 30% tidak menunjukkan aktivitas. Klindamisin menghasilkan zona hambat 29,57 mm, sedangkan kontrol negatif tidak menunjukkan daya hambat. Disimpulkan bahwa emulgel kombinasi fraksi daun karsen dan kayu kulit manis memiliki aktivitas antibakteri yang meningkat seiring kenaikan konsentrasi dan berpotensi dikembangkan sebagai sediaan topikal herbal pendukung terapi ulkus diabetikum.

Kata kunci: emulgel, daun karsen, kayu kulit manis, antibakteri, ulkus diabetikum.

ABSTRACT

Diabetes Mellitus is an increase in blood glucose levels from the normal fasting range of 80-90 mg/dl, or the non-fasting range of 140-160 mg/dl. If diabetes mellitus is not treated quickly, it can cause complications such as blurred vision, heart disease, kidney disease, and in the long term, hyperglycemia can cause neuropathic complications. Diabetic ulcers are a complication of diabetes mellitus that is often accompanied by bacterial infections, requiring effective topical therapy such as emulgel. Karsen leaves (Muntingia calabura L.) and cinnamon bark (Cinnamomum sp.) are known to contain bioactive compounds with antibacterial potential. This study aims to develop and evaluate the antibacterial activity of an emulgel combining the active fractions of these two ingredients as a candidate for topical therapy for gangrenous wounds. The active fractions were formulated in emulgel form with concentrations of 10%, 30%, 50%, 60%, and 70%. Antibacterial testing was carried out using the agar diffusion method, with clindamycin as a positive control and emulgel base as a negative control. The results showed that the emulgel began to have antibacterial activity at a concentration of 50% with an inhibition zone of 12.96 mm, which increased at concentrations of 60% and 70% to 14.00 mm and 15.24 mm, respectively. Concentrations of 10% and 30% showed no activity. Clindamycin produced an inhibition zone of 29.57 mm, while the negative control showed no inhibition. It was concluded that the combination emulgel of karsen leaf and cinnamon bark fractions has antibacterial activity that increases with increasing concentration and has the potential to be developed as a topical herbal preparation to support diabetic ulcer therapy.

Keywords: emulgel, cherry leaves, cinnamon bark, antibacterial, diabetic ulcers.