Anterior elbow fracture dislocation with ulnar nerve palsy in a six-year-old child

ABSTRACT

The aim of this study was to identify the bioactive compound and evaluate the antibacterial activity of torch ginger flower oil extracted using subcritical carbon dioxide. The antibacterial activity was evaluated in agar diffusion assay, while MIC and MBC were determined using the microdilution broth assay. The essential oil was subjected to metabolomics profiling using GC-MS and 1H-NMR techniques. The results demonstrated strong antibacterial activity towards Salmonella typhimurium, Staphylococcus aureus, and Escherichia coli. The MIC values were 0.0625, 0.25, and 0.25 mg/mL, and the MBC values were 0.25, 0.5, and 1 mg/mL towards S. typhimurium, S. aureus, and E. coli, respectively. A total of 33 compounds were identified using GC-MS including 15 compounds (45%) known for their antimicrobial activity. In addition, sixteen metabolites were identified using NMR analysis and 8 out of the sixteen metabolites (50%) have antibacterial activity. The extracted oil demonstrated broad range for antibacterial activity and has high potential for applications in pharmaceutical and food industries. Practical Applications. The oil extracted from the torch ginger flower was found very stable and has promising applications as antibacterial agent for food and pharmaceutical industries.