Pengujian daya hambat kasa yang mengandung framycetin dibandingkan dengan kasa berparafin secara in vitro dalam upaya pencegahan infeksi oleh pseudomonas aeruginosa = Inhibitory potential of framycetin dressing compared to paraffin dressing in vitro to determine its role in prevention of pseudomonas aeruginosa wound infection

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Abstrak

Pseudomonas aeruginosa infection on wounds, especially burn wounds can cause prolonged healing and may lead to sepsis. Framycetin, an aminoglycoside, can be impregnated into paraffin based-dressing used in wound management to prevent wound infection. Inhibitory potential of framycetin dressing against Pseudomonas aeruginosa needs to be evaluated in order to find out whether this dressing can prevent pseudomonas wound infection or not.

This research aims to determine inhibitory potential of framycetin dressing against Pseudomonas aeruginosa compared to paraffin dressing. In vitro test was conducted by exposing suspension of Pseudomonas aeruginosa to framycetin dressing and paraffin dressing. The suspension was diluted in ten time serial dilution. Plating on agar plates was done in duplo at exposure time of 0, 30 minutes, 2, 4, 6, and 24 hours. Growth of colonies on medium was evaluated and colonies on plates that are 10-150 in number were counted. The test was done in triplicate. Inhibitory potential of dressing is defined as its ability to inhibit bacterial growth, indicated by lower colony number in dressing exposed groups compared to positive control.

The result of this experiment showed that framycetin dressing exhibited inhibitory potential at exposure time of 4, 6, and 24 hours. Optimal inhibitory potential of framycetin dressing was exhibited after 4 hours of exposure, when the only decrease in colony number throughout the incubation occured. Paraffin dressing exhibited its potential at 4 and 24 hours. The colony number of framycetin dressing exposed suspension was signifficantly lower than that of paraffin dressing after exposure time of 4 and 6 hours. In conclusion, framycetin dressing has better inhibitory potential compared to paraffin dressing especially within 4 to 6 hours of exposure. This result implicates that framycetin dressing may have the ability to prevent Pseudomonas aeruginosa infection.