

ABSTRACT

Staphylococcus aureus, one of pathogens bacteria, causes many kinds of Staphylococcosis. Staphylococcal wound infections, could be then followed by abscesses and septicemia. Recently is also known *Staphylococcosis* caused by *Methicillin-resistant S. aureus (MRSA)*, which could also infect both human and animals. Recent study has showed the ability of *Garlic (Allium sativum)* as an antibacterial and immunomodulatory against *Staphylococcal*, which could also increase macrophage activity.

Recent *in vivo* experimental study using a complete-randomized design was aimed to find out the effects of topical treatment of garlic juice due to *staphylococcal* skin inflammatory responses in mice (*Mus Musculus*), based on the number of inflammatory cells, such as neutrophils, macrophages that produces $TNF-\alpha$, and $IL-1\alpha$. It was conducted for five days with eleven treatments, each with five replications: five groups of mice treated with garlic; five groups of untreated mice; and a negative control group. Neutrophils were observed using Hematoxylin Eosin staining (HE), whereas $TNF-\alpha$ and $IL-1\alpha$ using Immunohistochemistry Test. The result showed significant differences between garlic juice-treated group and untreated group, by the decreasing of neutrophils and macrophage with $IL-1\alpha$ in treated group. However, there were no significant differences in the number of $TNF-\alpha$ macrophages.

The conclusion of the study was topical therapy of garlic juice could be significantly decrease the cells number of neutrofil and macrophage that produces $IL-1\alpha$ in staphylococcal skin wounds of mice (*Mus Musculus*), while it could not changed the number of macrophage that produces $TNF-\alpha$.

Key words: *S. aureus*, garlic juice, Neutrophil, Macrophage, $TNF-\alpha$, $IL-1\alpha$