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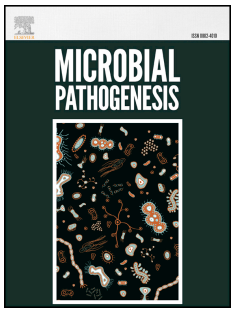

Clinical responses in cows vaccinated with a developed prototype killed *Staphylococcus aureus* mastitis vaccine

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Clinical responses in cows vaccinated with a developed prototype killed *Staphylococcus aureus* mastitis vaccine.

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ABSTRACT

Mastitis is an inflammatory condition of the udder that occurs as a result of the release of leucocytes into the udder in a response to bacterial invasion. The major causes of mastitis are an array of gram positive and negative bacteria , however, algae, virus, fungi, mechanical or thermal injury to the gland have also been identified as possible causes. Mastitis vaccines are yet to be developed using Malaysian local isolate of bacteria. The objective of the present experimental trial was to develop a monovalent vaccine against mastitis using *S. aureus* of Malaysian isolate and to evaluate the clinical responses such as temperature, respiratory rates and heart rates in vaccinated cows. *S. aureus* is a major causative bacteria in clinical and subclinical types of mastitis in cows. Four concentrations of the bacterin (10^6, 10^7, 10^8 and 10^9 cfu /ml of the local isolate of *S. aureus*) were prepared using Aluminium potassium sulfate adjuvant. Thirty cows were grouped into four treatment groups (B, C, D and E) with a fifth group as control (A). These groups were vaccinated intramuscularly(IM) with the prepared monovalent vaccine and its influence on the vital signs were intermittently measured . The mean of rectal temperature was significantly different ($p< 0.05$) at 0hr Post Vaccination [1]" in groups D and E (39.5 ± 0.15 °C and 39.4 ± 0.15 °C respectively) and at 3hrs PV in groups C, D and E (39.8 ± 0.14 °C, 39.9 ± 0.14 °C and 40.3 ± 0.14 °C respectively) compared to the control group . This indicated a sharp increased rectal temperatures between 0hr to 3hrs PV in groups C, D and E which later declined at 24hrs PV. The mean of rectal temperature of group E was significantly different ($p< 0.05$) at weeks 1 and 2 PV (39.87 ± 0.19 °C and 39.80 ± 0.18 °C respectively) compared to the control group. The mean of heart rate was significantly different ($p< 0.05$) at week 1 PV in groups D and E (83.0 ± 3.8 beats/minute and 80.0 ± 3.8 °C respectively) compared to control. A trending decrease was however observed in heart rates of group E from weeks through 4 PV and in group D from weeks 1 through 3 PV. The mean of respiratory rates was significantly