# THE DEVELOPMENT OF STAPHYLOCOCCUS SPP. INFECTED WOUND MODELS FOR MEDICAL DEVICE TESTING

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## Introduction

As material science has progressed, dressings in many forms have been used to treat wounds. In vivo testing of their efficacy requires the existence of a wound and therefore this study aimed to create a wound model, in mice, infected with methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-resistant *Staphylococcus epidermidis* (MRSE).

## Materials and methods

**16 female CD 1 mice 10 weeks**

| Control group |
| MRSA group ($3 \times 10^9$ CFU/mL) |
| MRSE group ($1.8 \times 10^9$ CFU/mL) |

The follow-up period was 7 and 14 days, points in the study when half of the animals in each group were euthanized and samples were collected for identification of infection.

## Results and discussions



Fig 1. Healing dynamics of the skin wound surface



Fig 2. SII values throughout the study
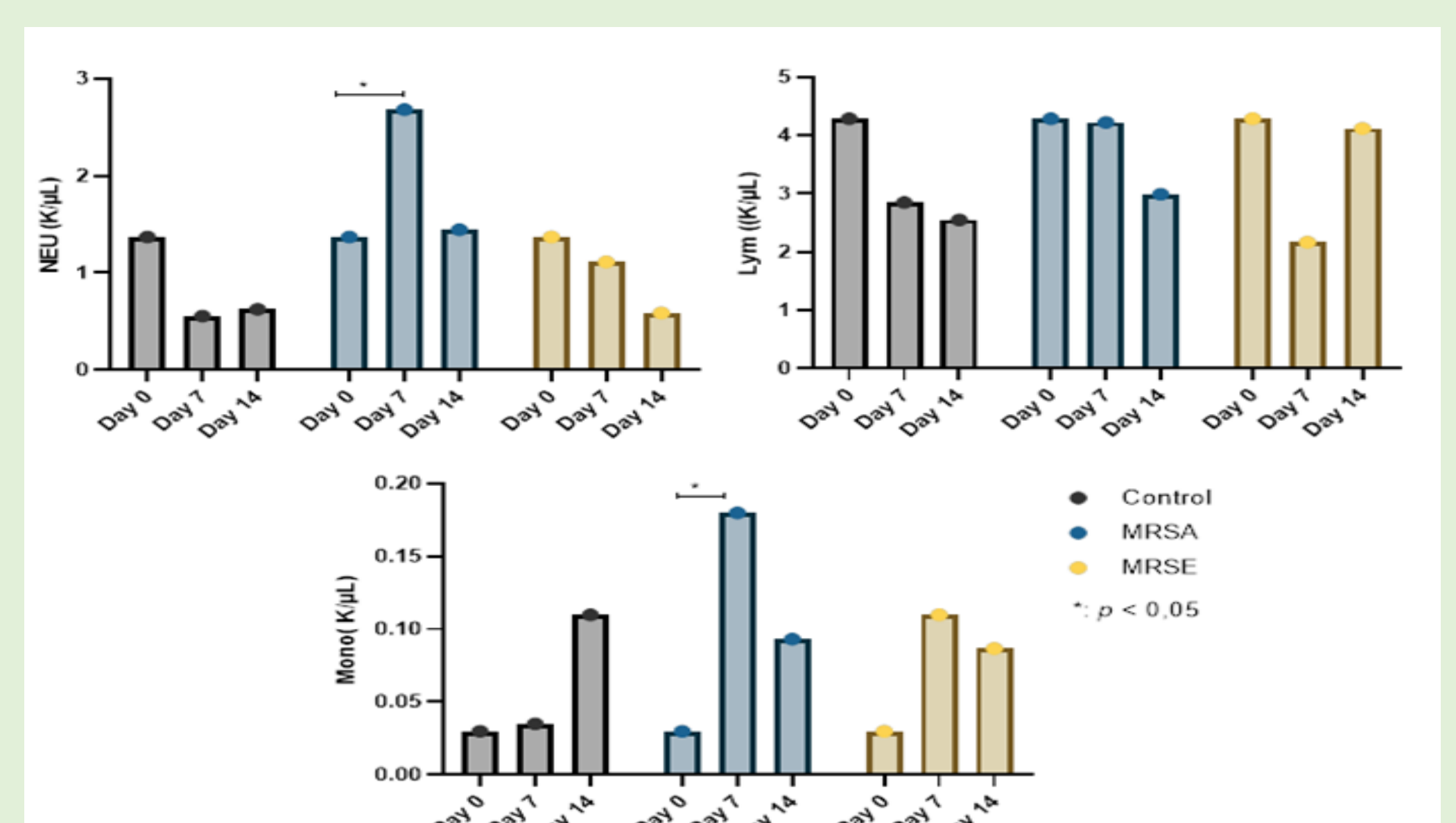


Fig 3. The reactivity of neutrophils, lymphocytes, and monocytes during the study

## Conclusions

The results obtained from clinical, microbiological, and hematological analysis showed that the ideal wound model for testing medical devices is the MRSA-infected wound (inoculation at $10^9$ CFU/mL ), and the optimal testing interval we recommend is 3-7 days from the time of injury.
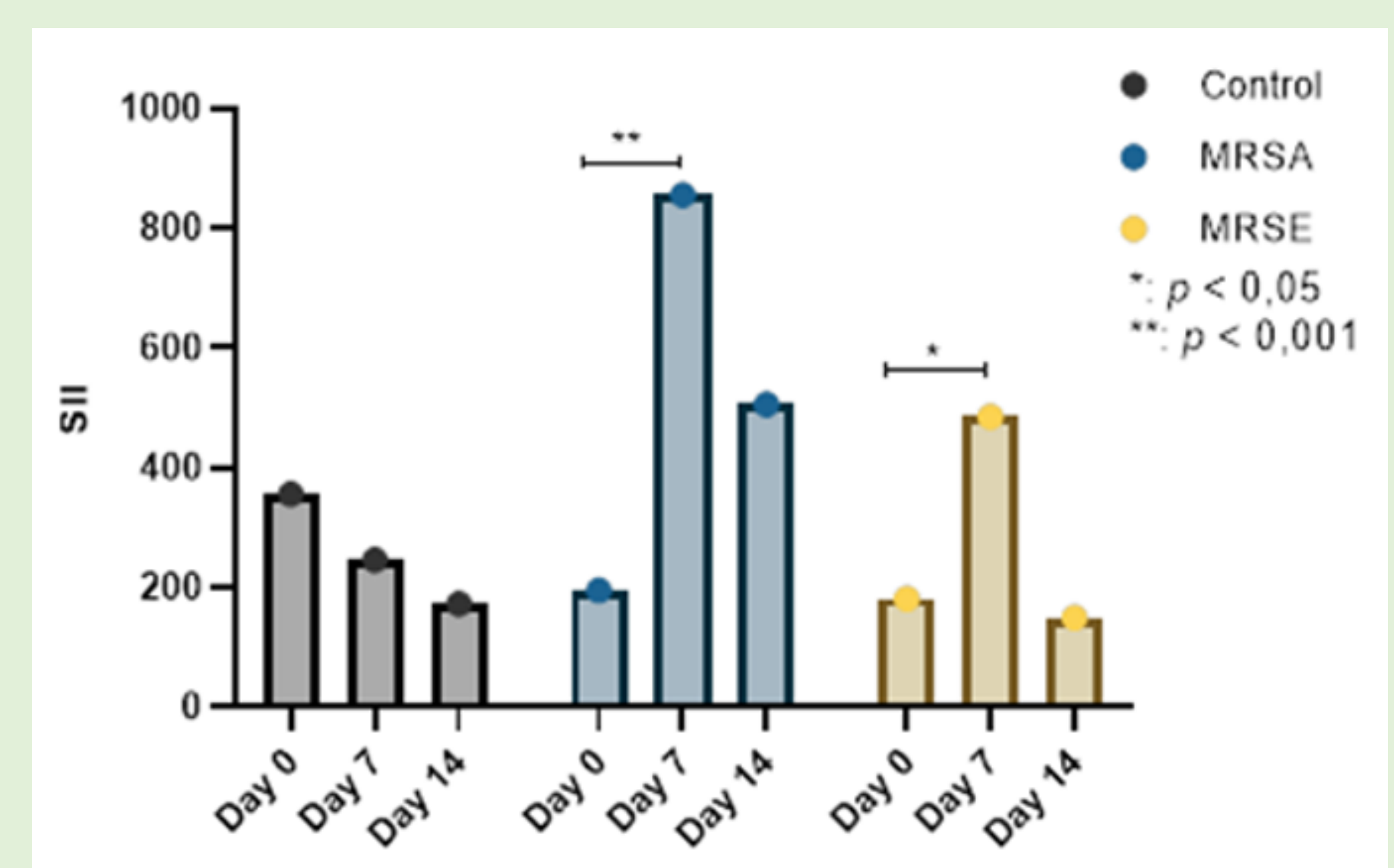
## Acknowledgments