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A study of the differences between the interaction and virulence patterns of UK and Nigerian MRSA isolates

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Staphylococcus aureus has been identified as the main etiological agent of many infectious diseases in Africa, yet data available about the pathogen are still relatively limited when compared with information on the pathogen from developed countries. There is an indication that African *S. aureus* isolates may be more virulent than their counterparts from other parts of the world; therefore there is need for detailed studies to confirm or refute this possibility. Consequently, this study primarily aimed to ascertain if Nigerian methicillin resistant *S. aureus* (MRSA) were more virulent than UK MRSA. In addition, differences in the level at which UK and Nigerian MRSA isolates interact with mammalian cells was also investigated in this study. Levels of interaction of the UK and Nigerian MRSA isolates with mammalian cell lines (KB epithelial and A549 lung cell lines) were investigated in association, invasion and survival assays. The toxic effects of both UK and Nigerian MRSA on mammalian cell lines (KB epithelial and A549 lung cell lines) were investigated in lactate dehydrogenase colorimetric cytotoxicity assays. No significant difference was observed in the rate at which UK and Nigerian MRSA interacted with both cell lines. However, it was only after live MRSA infected the cell lines that significant differences were observed between the toxic effects of the UK and Nigerian MRSA isolates on the cell lines.

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