

MRSA in Uganda? A pilot screening study from an Antenatal Clinic at Uganda's busiest Maternity Hospital

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Introduction

- Routine screening of patients for Methicillin-resistant *Staphylococcus Aureus* (MRSA) is not part of current Ugandan clinical practice.
- MRSA is associated with significant morbidity and mortality(1)
- Up-to-date data on MRSA prevalence is vital if we are to uphold health and economic outcomes globally.

Aim

- To determine the nasal and groin MRSA carriage rates in women attending an antenatal clinic (ANC) in a tertiary hospital in eastern Uganda; the National Maternity hospital.

Methods

- 52 women presenting to ANC were verbally consented for this pilot study.
- UK Standards for Microbiology Investigations(1) were used to collect nasal and groin swab specimens.
- Swabs were used to directly inoculate chromogenic selective MRSA agar plates, incubated at 37C for 24 hours and then read.
- MRSA was suggested by characteristic mauve/rose colonies (Figure 1).
- A *Staphylococcus latex* agglutination test was subsequently performed to confirm *Staphylococcus aureus*.

Results

Of 52 women screened, 7 (14%) were MRSA colonised- either in nose, groin or both sites:

1/52 (1.9%) positive MRSA groin swabs

4/52 (7.8%) positive MRSA nasal swabs

2/52 (3.8%) positive MRSA from both groin and nasal swabs



Figure 1: Depiction of the MRSA selective chromogenic agar plate with the arrow pointing to typical MRSA colonies.

Discussion

- The prevalence in this study (14%) is higher than previously reported community-acquired MRSA rates from Uganda- 5.7% (3)(Table 1).
- It is also higher than published reports of hospital-acquired MRSA from Uganda which showed a 7.6% infection rate in pus swabs from patients with a diagnosed surgical site infection(4)(Table 1).
- This study may have increased pick-up rates of MRSA because both nose and groin were swabbed, in contrast to previous studies that only conducted nasal swabs.

Table 1: Literature review of MRSA prevalence both in community and hospital settings in Uganda

Year	Location	Population	N	Body site swabbed	MRSA incidence	Reference
2013	Mulago NR hospital	Adult patients with SSI	314	Pus swabs	24 out of 314 samples were MRSA (7.6% infection rate)	4
2017	Mbarara NR hospital	Adults	500	Anterior nares	2.8% colonisation rate	5
2019	Eastern Uganda- rural community	Healthy children <5	742	Nasopharyngeal	5.7% colonisation rate	3
2021	3 primary HC facilities in Uganda: Mukono, Kawaala, Kitebi	HIV-1 and HIV-2 negative women in labour	1472	Vaginal colonisation	5.8% colonisation rate	6
2021	Fort Portal Regional Referral Hospital		41 SA isolates	5/41	12.2% colonisation	7

Conclusions

- 14% of women presenting to antenatal clinic are colonised with MRSA in the community. This rate is higher than previous Ugandan studies, both in the community and in hospital-acquired MRSA rates.
- This apparent difference in MRSA rates needs further review with a larger prevalence study.
- If rates are indeed higher in Uganda than previously thought, there is an urgent need to improve infection prevention control (IPC) practices within the hospital (i.e. hand hygiene etc).
- In future as surveillance of MRSA and Antimicrobial resistance becomes more developed, it is hoped that MRSA screening and decolonisation becomes part of standard Ugandan clinical practice.

References

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