

P2616 MSSA/MRSA nasal screening: evaluation of the Panther Fusion Hologic system

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Background: Evaluation of Hologic Panther Fusion® automated system (HPF) for nasal screening of methicillin-susceptible (MSSA) or -resistant (MRSA) *Staphylococcus aureus*.

Materials/methods: 434 nasal specimens collected on eSwab were screened with HPF MRSA assay. Results were compared to standard culture on BBL™ CHROMagar™ *S. aureus* and chromID® MRSA. Discordant results were tested with Xpert SA Nasal Complete GeneXpert®. In case of negative culture and positive molecular technique, samples were seeded on selective agars after 24-hours enrichment in BHI broth at 37°C. In case of MRSA positive culture and discordant molecular technique, the strain was characterized for *mecA*, *SCCmec* cassettes using DNA chip.

Results: Presented in Table 1.

- A: 4/4 detected also as MSSA+ using GeneXpert. Molecular characterization showed that the 4 isolates were MRSA with atypical *SCCmec* cassettes.
- B: 25/30 confirmed MSSA+ using GeneXpert. For the 5 remaining specimens (only positive using HPF), further analyses are in progress (true or false positive?).
- C: 2/6 corresponded to false negative result on MRSA agar, 2/6 to false negative on primary culture (positive after enrichment), 2/6 to MSSA+ "dropout" (no *mec* gene and residual cassette fragment) falsely detected as MRSA using HPF or GeneXpert.
- D: 6/9 confirmed as MRSA+ after enrichment and/or GeneXpert. For the 3 remaining specimens (only positive using HPF) further analyses are in progress (true or false positive?).
- E: 3/3 false negative using HPF. All 3 were confirmed as MSSA+ using GeneXpert and as MSSA+ using HPF on liquid enrichment.

Based on the data available, HPF presents an overall agreement of 97.5% and 99.1% respectively for SA and MRSA detection, 4 out of the 20 MRSA+ specimens being not detected.

Conclusions: HPF MRSA assay is a reliable tool for rapid screening for *S. aureus* nasal carriage. This instrument, with random access capability, allows rapid and emergency analysis, and corresponds therefore to a new step in complete molecular biology automation.

HOLOGIC	Primary culture			
	MSSA	MRSA	Negative	TOTAL
MSSA	82	4 _(A)	30 _(B)	116
MRSA	6 _(C)	16	9 _(D)	31
Negative	3 _(E)	0	284	287
TOTAL	91	20	323	434

Table 1: Comparison culture vs HPF MRSA assay

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