

Statistical analysis

The data of the current study was processed using Microsoft EXCEL 2007 (Microsoft, Corp., USA). P value less than 0.05 was considered significant.

Results

From 100 nail swabs, 155 bacterial isolates were obtained. Out of 155 bacterial isolates, 132 (85.2%) were Gram-positive cocci and 23 isolates (14.8%) were non Gram-positive cocci. Only Gram-positive isolates were subjected to other tests. For catalase test, 129 out of 132 Gram-positive isolates (97.7%) were catalase-positive. In glucose oxidation and fermentation test, 113 isolates (85.6%) can utilize glucose in both aerobic and anaerobic conditions, 19 isolates (14.4%) cannot utilize glucose or utilize in one condition only (aerobically or anaerobically). Acid production from the fermentation of mannitol in the mannitol salt agar (MSA) produces yellow colonies and changes the surrounding media into yellow color which was indicated as a positive result. The high salt content in the MSA inhibit the growth of most,

but not all, bacteria other than staphylococci (59). A total of 70 isolates (53.0%) showed a positive result in mannitol salt agar test. The mannitol- positive isolates acted as presumptive of *Staphylococcus aureus* (*S. aureus*). Based on the result of DNase test, 20 isolates (28.6%) out of the 70 presumptive *S. aureus* isolates gave positive test results as indicated by the presence of clearing zone on the surrounding of the colonies when flooded with 1 N HCl. In tube coagulase test, the positive results were determined by the formation of clot within the glass tube. Both citrated human plasma and citrated rabbit plasma gave the same number of isolates showing positive results, which were 13 isolates (18.6%) out of the 70 isolates tested. These 13 positive isolates were considered as *S. aureus* while the rest were considered as coagulase-negative staphylococci (CoNS). However, the activity of fibrinolysin was absent in this test. The details of each test result are shown in Table 2.

Table 2. Identification of *S. aureus* with various tests

Results	MSA (N=132)	Catalase (N=132)	GO & FT (N=132)	DNase (N=70)	Tube Coagulase (N=70)	
					CHP	CRP
Positive	70 (53.0%)	129 (97.73%)	113 (85.6%)	20 (28.6%)	13 (18.6%)	57 (81.4%)
Negative	62 (47.0%)	3 (2.3%)	19 (14.4%)	50 (71.4%)	13 (18.6%)	57 (81.4%)

GO = glucose oxidation, FT = fermentation test, CHP = citrated human plasma, CRP = citrated rabbit plasma

Antibiogram Typing

The susceptibility data of all presumptive *S. aureus* was presented in Table 3. From the results, all isolates (100%) were susceptible toward vancomycin (30 µg) and gentamycin (10 µg). There was one isolate (1.4%) showing resistance and 1 isolate (1.4%) had intermediate resistance toward methicillin (10 µg). The number of the isolates which were resistant toward other antimicrobial agents were: Cefoxitin (30 µg) 1 (1.4%), Chloramphenicol (30 µg) 1(1.4%), Oxacillin (1 µg), 1(1.4%),

Erythromycin (30 µg) 10(14.3%), Trimethoprim (1.25 µg) 5(7.2%), Tetracyclin (30 µg) 2(2.9%), PenicillinG (1 µg) 58(82.9%), and Ampicillin (10 µg) 59(84.3%).

Based on the result, all coagulase-positive isolates (100%) were resistant toward penicillin G (1 µg) and ampicillin (10 µg), while all were susceptible toward vancomycin (30 µg) and gentamycin (10 µg). There was only one isolate (7.7%) resistant toward tetracycline and one isolate (7.7%) was intermediate toward erythromycin.