Streptococcus anginosus Infections Clinical and Bacteriologic Characteristics A 6-year Retrospective Study of Adult Patients in Qatar

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Background

The aim of this study was to assess clinical presentation and antimicrobial susceptibility of Streptococcus (S.) anginosus group in- fections in Hamad General Hospital, a tertiary care hospital in the state of Qatar, which is a multinational community. The S. anginosus group is a subgroup of viridans streptococci that consist of 3 different species: S. anginosus, S. constellatus,andS. intermedius. Although a part of the human bacterial flora, they have potential to cause suppurative infections.

Method

We studied a total of 101 patients with S.anginosus group infec tions from January 2006 until March 2012 by reviewing medical records and identification of organisms by VITEK 2 and MALDI-TOF.

Results

The most common sites of infection were skin and soft tissue, intra-abdominal, and bacteremia (28.7%, 24.8%, and 22.7%, respectively). Abscess formation was seen in approximately 30% of patients. Streptococcus constellatus was the most common isolated species (40%) followed by S. anginosus (30%) and S. intermedius (7%). In 23% of specimens, the species was unidentified. The most common type of specimen for organism isolation was blood followed by pus and tissue (50%, 22%, and 8%, respectively). Streptococcus constellatus was more frequently associated with abdominal and skin and soft tissue infections than the other two species, whereas S. anginosus was isolated more frequently from blood. All isolates were susceptible to penicillin, ceftriaxone, and vancomycin. Susceptibility to erythromycin and clindamycin was also good, reaching 91% and 95%, respectively. 40 % patients needed surgical drainage along with antibiotic therapy.

Conclusion

Identification of S. anginosus group to species level is helpful in clinical practice because different species exhibit different pathogenic potentials.

Comparative prevalence of species in significant clinical specimens.

Isolation site	S. anginosus	S. intermedius	S. Constellatus	undifferentiated
Blood	18 (35.4%)	4 (7.8%)	14(27.5%)	15(29.4%)
Purulent collection	3(13.6%)	1(4.5%)	16(72.7%)	2(9.1%)
Tissue	3(37.5%)	0	2(25%)	3(37.5%)
sputum	0	0	0	1(100%)
CSF	0	1(50%)	0	1(50%)
peritoneal fluid	1(100%)	0	0	0
pleural fluid	0	1(50%)	1(50%)	0
wound swabs	3(21.4%)	0	9(64%)	2(14.3%)
total no (%age) of specimens	30(30%)	7(6.9%)	41(40%)	23(22.8%)
Clinical presentation				
Bacteremia	10(40%)	2(8%)	8(32%)	5(20%)
SSTI	11(32.4%)	1(2.9%)	15(44%)	7(20.6%)
Intra abdominal infections	5(20%)	1(4%)	13(52%)	6(24%)
Pneumonia	2(28.6%)	1(14.3%)	2(28.6%)	2(28.6%)
meningitis	0	1(50%)	0	1(50%)
dentoalveolar infections	2(25%)	1(12.5%)	3(37.5%)	2(25%)
endocarditis	1(50%)	0	1(50%)	0
surgical intervention	13(31.7%)	3(7.3%)	19(46%)	6(14.6%)
outcome				
died due to co-morbid condition	3(10%)	1(14%)	0	4(17%)
died due to infection	0	0	2(4.8%)	0
recurrance	0	0	1(2.4%)	2(8.6%)

mean age	44+- 17
M/F ratio	3:01
nationality	78% NQ *
	22% Q **
H/O previous surgery	18 (17.8%)
Co-morbidities	50.00%
DM	25.00%
HTN	13.00%
Malignancy	4.00%
CVA	2.00%
cirrhosis	2.00%
CKD	2.00%
Others	20.00%
Site of infection	
SSTI	29/101 (28.7%)
intraabdominal infection	25/101 (24.8%)
Bacteremia	23/101 (22.7%)
dentoalveolar	8/101 (7.90%)
thoracic	7/101 (6.9%)
Osteomyelitis	5/101 (5%)
meningitis	2/101 (2%)
endocarditis	2/101 (2%)
Abcess formation	**30(29.7%)**
SSTI	10/30 (9.9%)
abd/pelvis	9/30 (8.9%)
empyema/ mediastinal abscess	5/30 (4.9%)
dentoalveolar	5/30 (4.9%)
brain	1/30 (0.99%)
SURGICAL INTERVENTION	**40 (39.6%)**
OUTCOME	
cured	87.00%
recurrance	3%
death due to primary disease	8%
death due to overwhelming sepsis	2%

*Non-Qatari
**Qatari

TABLE 1: summary of clinical & demographic characteristics of patients with streptococcus anginosus infection

SPECIMEN details	
blood	51 (50%)
pus	22 (21.8%)
wound swab	14 (13.9%)
tissue	8 (7.9%)
CSF	2 (2%)
pleural fluid	2 (2%)
sputum	1 (1%)
peritoneal fluid	1 (1%)
SENSITIVITY	
Pencillins	100%
Erythromycin	91.10%
clindamycin	95%
ceftrioxone	100%
vancomycin	100%
significant co-organisms	43.60%
anaerobes	24%
enterobacteraciae	9%
Psedomonas aerogenosa	8%
Staphylococcus aureus	9%
MTB	1%

TABLE 2: specimen detail & antimicrobial suseptibility patterns

مستشفى الوكرة
Al Wakra Hospital
عضو في مؤسسة حمد الطبية
A Member of Hamad Medical Corporation
حمد Hamad
مؤسسة حمد الطبية
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