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RESEARCH ARTICLE

AN OVERVIEW AND A PROSPECTIVE ANALYSIS ON THE RISK FACTORS AND ANTIMICROBIAL SENSITIVITY PATTERNS OF INFECTIOUS WOUNDS

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ABSTRACT

Objectives: To analyse the age wise and gender wise prevalence, risk factors, severity pattern, antimicrobial sensitivity patterns of infectious wounds.
Methods: A prospective study, conducted for of 5 months. 138 wounds with pus were included. A data collection form including demographics, severity assessment scale, antibiogram, medication chart was used.
Results: Infectious wounds were more prevalent in males (71.01%). An age group of 40 -49 years is found more associated with wound infections (26.81%). The major risk factor was Diabetes mellitus (57.24%). The most common site of infection was found to be leg (37.68%).Moderately severe infections were more (50.72%). Gram negative bacteria (54.03%) were observed more. Among gram negative bacteria *E.coli* (25.36 %) was common. *S. aureus* was predominant (70.17%) gram positive bacteria. *E.coli* was mostly sensitive to Amikacin (74.28%) and resistant towards Amoxicillin (51.42%). *S.aureus* was sensitive to Vancomycin (55 %) and was resistant towards Cotrimoxazole (32.5 %).
Conclusion: Most of the microorganisms showed resistance to commonly used antibiotics indicates the need of sensitivity testing.

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INTRODUCTION

Wound

A wound is a breach in the skin and the exposure of subcutaneous tissue following loss of skin integrity provides a moist, warm, and nutrient environment that allows microbial colonization and proliferation. Replication of microorganisms within the wound area, leading to cell injury and tissue damage is referred as wound infection. Abundance and diversity of microorganism depends up on various factors such as wound site, wound depth, level of tissue perfusion, patient immunity. Wound need immediate medical care, particularly if there is lot of bleeding or bleeding last more than 20 minutes. The Signs and symptoms include, Malaise, Fever, Fluid drainage etc. Malaise is a common non-specific sign of a localized systemic infection. It is referred as the feeling of tiredness and a lack of energy. Fever is most common sign of wound infections. A temperature rise of 101 degrees or more, it may be indicative of a wound infection. Fluid (pus, blood or watery secretion) usually ooze out from infectious wound. If the drainage fluid is cloudy, green, or foul smelling, this could be a sign that the wound is infected. Healthy wound drainage can be managed by absorbent dressings like hydrocolloids or negative pressure therapy. Other common sign of wound infection is redness (erythema), swelling and pain are signs of inflammation and infection. The common risk factors are poorly controlled DM, site of wound, Personalhygiene, Smoking and alcoholism, Age, surgery, corticosteroids, Immune compromised patient, Hyper tension etc. Wounds are classified. According to level of contamination as clean wound, contaminated wound, infected wound and colonized wound.

According to the presentation of wounds: Open and closed wounds Prophylactic antibiotic therapy is preferred for wound infection. The length of antibiotic therapy may vary, but will be for at least one week. The pus from wound may be tested to isolate the organism in order to determine the sensitivity pattern. First patient should be treated with empirical antibiotic therapy then patient should specific Antibiogram according to culture and sensitivity testing. Some wounds are

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infected with methicillin-resistant Staphylococcus aureus (MRSA), which is resistant to commonly used antibiotics. A MRSA infection will need a specific antibiotic to treat it.

Wound severity Assessment

The wound severity assessment was done using a wound severity assessment scale; the ulcer is categorized with respect to surface area, exudates, and type of wound tissue. Sub-score for each of these ulcer characteristics is given. The sub-scores obtained are added to obtain the total score.

Surface area: Measuring the greatest length and the greatest width of the wound using a centimeter ruler. These two measurements are multiplied (length x width) to obtain an estimate of surface area in square centimeters (cm2). For the surface area a sub score ranging from 0 to 5 is assigned.

Exudate amount: The amount of Exudate (drainage) present after removal of the dressing and before applying any topical agent to the ulcer. Estimate the Exudate (drainage) as none, light, moderate, or heavy and scores ranging from 0 to 4 is given respectively.

Tissue Type: This refers to the types of tissue that are present in the wound (ulcer) bed. Score as a "4" if there is any necrotic tissue present. Score as a "3" if there is any amount of slough present and necrotic tissue is absent. Score as a "2" if the wound is clean and contains granulation tissue. A superficial wound that is reepithelializing is scored as a "1". When the wound is closed, score as a "0". 4 – Necrotic Tissue (Escher): black, brown, or tan tissue that adheres firmly to the wound bed or ulcer edges and may be either firmer or softer than surrounding skin. 3 – Slough: yellow or white tissue that adheres to the ulcer bed in strings or thick clumps, or is mucinous. 2 – Granulation Tissue: pink or beefy red tissue with a shiny, moist, granular appearance. 1 – Epithelial Tissue: for superficial ulcers, new pink or shiny tissue (skin) that grows in from the edges or as islands on the ulcer surface. 0 – Closed/Resurfaced: the wound is completely covered with epithelium (new skin).

MATERIALS AND METHODS

The study was conducted in Karuna Medical College, Chittur, Palakkad. The study was conducted over a period of six months from November 2015toApril 2016.

Study Design: The study is designed as a prospective study. A Predesigned data collection form including demographic data, Present and past medical conditions, present and past medications, signs of infection, identified infectious organism, wound severity assessment scale, medication chart and Antibiogram report.

Study population: A total of 138 subjects were included in the study.

Study criteria: Inclusion criteria includes. Patients with pus containing wounds. Exclusion Criteria includes Pregnancy and obstetrics, pediatrics and wounds associated with burns.

Study procedure

A prospective study was carried out after ethical committee permission obtained from Grace College of pharmacy, Palakkad. The patients with pus containing wounds were included. Data's of the included patients were collected in predesigned data collection form including demographic data, Present and past medical conditions, present and past medications, signs of infection, identified infectious organism, wound severity assessment scale, medication chart and Antibiogram report. In the wound severity assessment scale, According to the scoring system, Severity Scoring: 0-5:-mild, 6-12:-moderate, 13-17:-severe. Culture and Sensitivity was analysed to determine the common organism, sensitivity and resistance pattern. The percentage resistance and sensitivity is determined to find out the most effective agent to treat infectious wounds.

Parameters for Evaluation

1. Distribution of infectious wounds with respect to Gender.
2. Distribution of infectious wounds with respect to Age.
3. To determine the severity patterns.
4. To determine site of infectious wounds.
5. To identify isolated microorganism present in the infectious wounds.
6. To determine prevalence between gram negative and gram positive organism.
7. Drug utilization patterns.
8. Antimicrobial sensitivity and resistance pattern.

RESULTS

In the study, a total of 138 patients were included, of these majority of them was male 71.01% which is contradictory to other similar studies and this may be due to the presence of risk factors in male gender. a 28.98 % women was also present with infectious wounds. (Figure 1 & Table 1)

Table 1. Gender wise Distribution

Gender	No of cases	%
Male	98	71.01
Female	40	28.98
Total cases	138	100

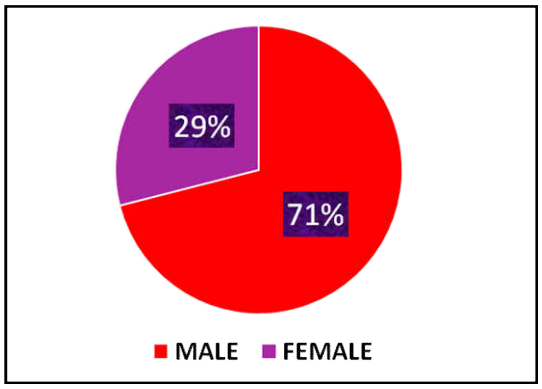

Fig. 1. Gender wise Distribution

Age wise distribution of patients

Table 2 and Figure 2 shows the age wise prevalence of patients with wound infection among the population in hospital. Out of 138 patients age group ranging from 40-49 (n = 37) shows more predominant with wound infections followed by 50-59 age group (n = 34).

Table 2. Age wise Distribution

AGE GROUP	NO OF CASES (n=138)	%
20-29	13	9.42
30-39	14	10.14
40-49	37	26.81
50-59	34	24.63
60-69	26	18.84
70-79	9	6.52
80-89	5	3.62

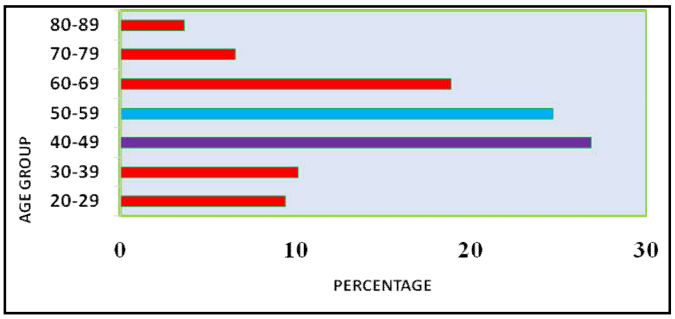

Fig. 2. Age wise Distribution

Distribution of risk factors

Table 3 and Figure 3 show the risk factors which contributes a marked change in severity of wound infection. Based on the data the most common risk factor for wound infection is DM, for male patients the percentage was 57.24% (n = 60) and females were 47.5% (n=19).

Table 3. Distribution of risk factors

Risk factors	No of cases	%	MALE	%	Female	%
Alcoholic	16	11.58	15	15.3	1	2.5
Smoking	8	5.79	7	7.14	1	2.5
Smoker and alcoholic	26	18.84	26	26.53	0	0
Diabetes mellitus	79	57.24	60	61.22	19	47.5
Hypertension	31	22.26	20	20.4	11	27.5
Others	8	5.79	7	7.14	1	2.5

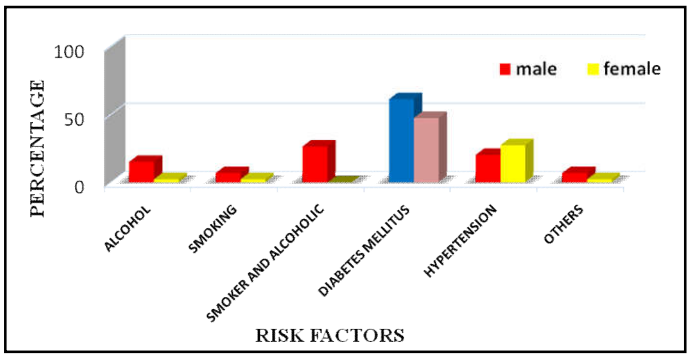

Fig. 3. Distribution of risk factors

Distribution of wound sites

Table 4 and Figure 4 show the distribution of wound sites. The most common site of infections observed in patients are leg and foot. Out of 138 patients 37.68% (n=52) had infection on leg and followed 35.5% (n=49) on foot.

Table 4. Distribution of wound sites

Site of infection	No of cases (n=138)	%
Leg	52	37.68
Foot	49	35.5
Hand	10	7.24
Others	9	6.52
Scrotum	8	5.79
Abdomen	5	3.62
Thigh	5	3.62

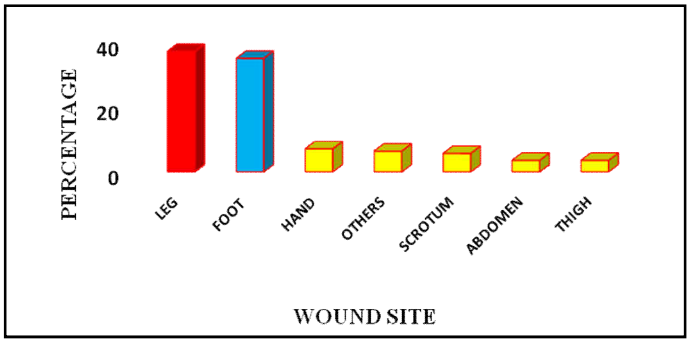

Fig. 4. Distribution of wound site

Distribution of diagnosis

Table 5 and Figure 5 show the distribution of diseasepattern, in this, most common is diabetic foot ulcer. Out of 138 cases collected 39.85% (n=55) were diagnosed as diabetic foot ulcers.

Table 5. Distribution of Diagnosis

Diagnosis	No of cases (n=138)	%
Diabetic foot ulcer	55	39.85
Nondiabetic ulcers	31	22.46
Diabetic gangrene	13	9.42
Cellulitis	8	5.79
Cellulitis +dm	6	4.34
Surgical site infection	6	4.34
Others	5	3.62
Osteomyelytis	4	2.89
Scrotum ulcer(d m)	4	2.89
Sepsis	3	2.17
Septic arthritis	3	2.17

Distribution of severity pattern

Table 6 and Figure 6 show distribution of severity pattern of wound infections. Out of 138 cases collected, based on severity assessment scale they were classified as mild (score: 0-5), moderate (score: 6-12), severe (score: 13-17).

About 70 (50.72%) of cases shows moderate scaling rate, 60 (43.47%) were severe. A minimum of 8 (5.79%) cases shows mild severity pattern.

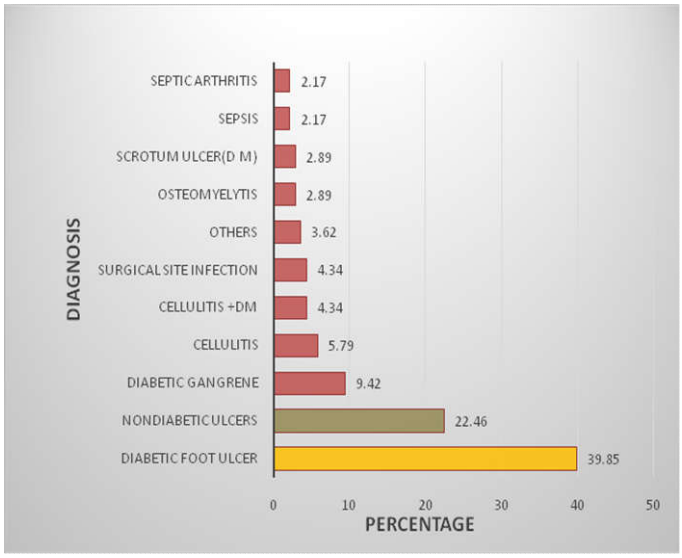

Fig.5. Distribution of diagnosis

Table 6. Distribution of severity pattern

Severity pattern	No of cases (n=138)	%
Mild	8	5.79
Moderate	70	50.72
Severe	60	43.47

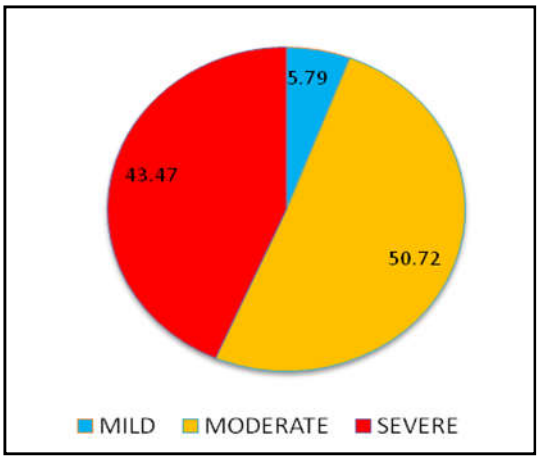

Fig. 6. Distribution of severity pattern

Distribution of isolated organism

Table 7 and Figure 7 show distribution of isolated organism in infected wounds. The most predominant organism isolated was *S.aureus,* which contribute28.98% (n=40) cases. *E.coli* was found to be the second most predominant organism isolated, 25.36% (n=35).

Table 7. Distribution of isolated organism

Organism isolated	No of cases (n=138)	%
Klebisella species	12	8.69
No organism isolated	14	10.14
CoNS	17	12.31
P.aeruginosa	20	14.49
E.coli	35	25.36
S.aureus	40	28.98

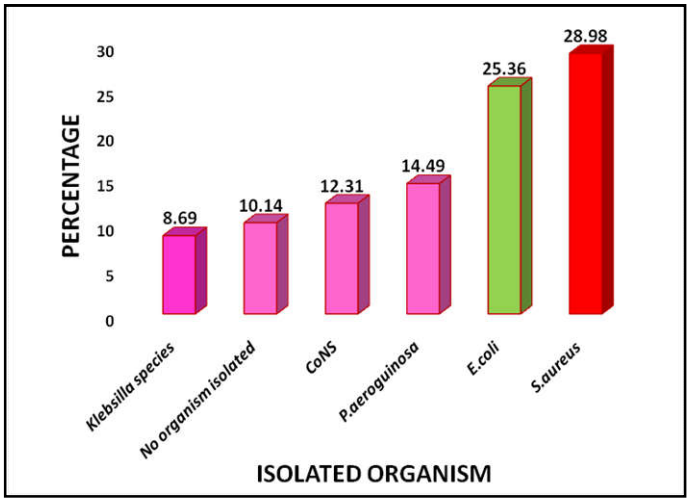

Fig. 7. Distribution of isolated organism

Distribution of Gram positive and Gram negative organism isolated

Table 8 and Figure 8 shows Distribution of Gram positive and Gram negative organism isolated from infectious wound. Among 138 cases, 14cases showed no bacterial growth, i.e., negative results. A54.03% of cases of gram negative organism were isolated (n=67) which was most predominant. Gram positive organisms contributed to a percentage of 45.96% (n=57).

Table 8. Distribution of Gram positive and Gram negative organism isolated

Type of organism	No of cases (n=124)	%
Gram positive organism	**57**	**45.96**
Gram negative organism	**67**	**54.03**

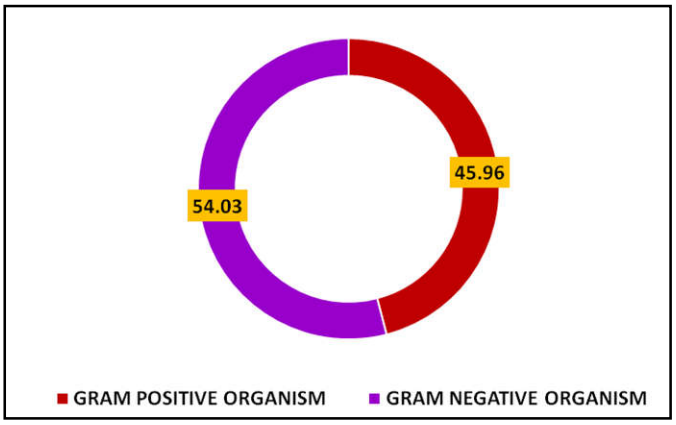

Fig. 8. Distribution of Gram positive and Gram negative organism isolated

Distribution of Gram Positive Organism

Table 9 and Figure 9 show distribution pattern of gram positive organism. The most predominant organism isolated was *Staphylococcus aureus* (n=40) out of 57 and the least organism isolated were *CoNS* (n=17) out of 57.

Table 9. Distribution of Gram positive organisms

Organism isolated	No of cases (n=57)	%
CoNS	**17**	**29.82**
Staphylococcus aureus	**40**	**70.17**

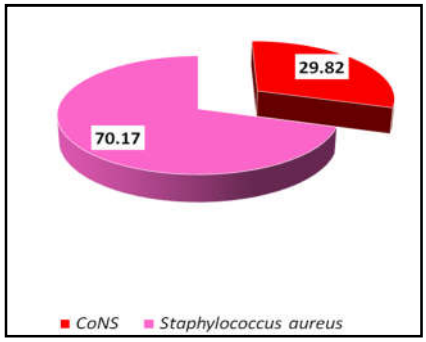

Fig. 9. Distribution of Gram positive organisms

Antibiotic sensitivity pattern of Gram positive organism

Table 10 and Figure 10 show Antibiotic sensitivity pattern of Gram positive organism isolated. Among which, Amikacin was found to be the most effective agent.

Table 10. Antibiotic sensitivity pattern of Gram positive organism

Antibiotics	*S.Aureus S%*	*CoNS S%*
Amikacin	35	35.29
Doxycycline	42.5	41.17
Ciprofloxacin	27.5	35.29
Levofloxacin	17.5	17.64
Azithromycin	2.5	11.76
Cotrimoxazole	42.5	41.17
Amoxicillin	25	5.88
Amoxiclav	2.5	29.41
Ceftriaxone	20	29.41
Vancomycin	55	58.83
Gentamycin	30	5.88
Ceftazidime	22.5	29.41
Piperazillin-tazobactam	0	ND
Imepenam	2.5	ND

Note :ND is not determined

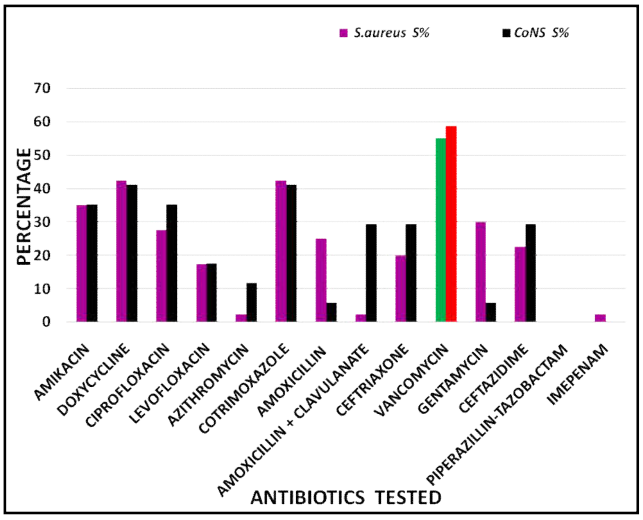

Fig.10. Antibiotic sensitivity pattern of Gram positive organism

Antibiotic resistance pattern of Gram positive organism

Table 11. Antibiotic resistance pattern of Gram positive organism

Antibiotics	*S.Aureus R %*	*CoNS R%*
Amikacin	10	5.88
Doxycycline	5	5.88
Ciprofloxacin	10	23.52
Levofloxacin	5	5.88
Azithromycin	2.5	5.88
Cotrimoxazole	32.5	35.24
Amoxicillin	17.5	11.76
Amoxiclav	10	17.64
Ceftriaxone	2.5	5.88
Vancomycin	5	0
Gentamycin	2.5	0
Ceftazidime	17.5	11.76
Piperazillin-tazobactam	2.5	ND

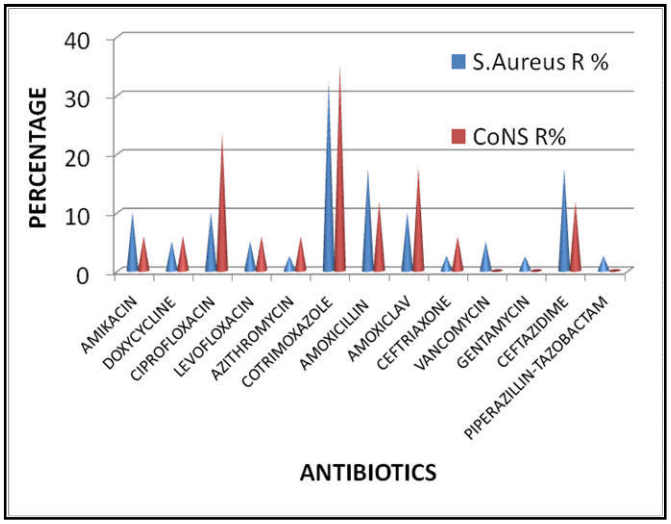

Fig. 11. Antibioticresistance pattern of Gram positive organism

Distribution of Gram negative organism

Table 12. Distribution of Gram negative organism

Organism isolated	No of cases (n=67)	%
Klebisella species	12	17.91
P.aeruginosa	20	29.85
E.coli	35	52.23

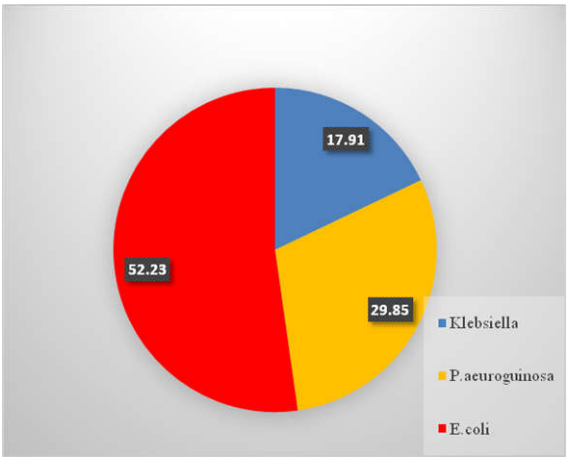

Fig. 12. Distribution of Gram negative organism

Table 12 and Figure 12 shows distribution of gram negative organism isolated. The most predominant gram negative organism was *E.coli* (n=35) out of 67 cases, which contribute 52.23%.

Antibiotic sensitivity pattern of Gram Negative organism

Table 13 and Figure 13 show antibiotic sensitivity pattern of Gram Negative organism.

Table 13. Antibiotic resistance pattern of Gram Negative organisms

Antibiotics	*P.aeuroguinosa* S%	*Klebsiella* S%	*E.coli* S%
Amikacin	55	66.66	74.28
Doxycycline	0	25	11.42
Ciprofloxacin	35	50	31.42
Levofloxacin	20	58.33	11.42
Azithromycin	5	ND	0
Cotrimoxazole	15	16.66	20
Amoxicillin	0	16.66	0
Amoxiclav	0	0	ND
Ceftriaxone	10	33.33	20
Vancomycin	ND	ND	5.71
Gentamycin	20	41.66	48.57
Ceftazidime	25	16.66	5.71
Imepenam	5	ND	2.85
Piperazillin-tazobactam	35	16.66	5.71

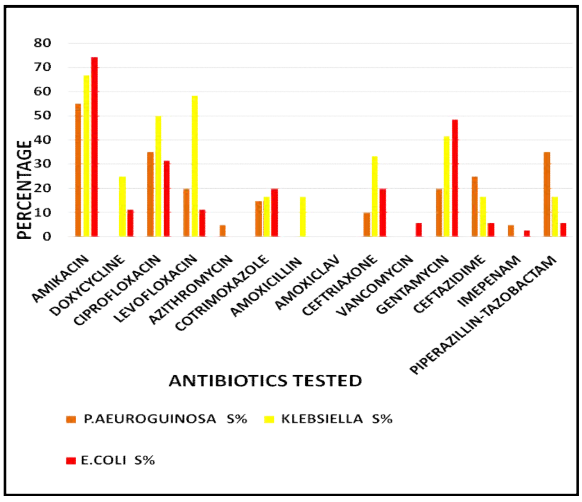

Fig. 13. Antibiotic sensitivity pattern of Gram Negative organism

Antibiotic resistance pattern of Gram negative organism

Table 14. Antibiotic resistance pattern of Gram Negative organisms

Antibiotics	P.aeruginosa R%	Klebisella R%	E.coli R%
Amikacin	10	16.66	5.71
Doxycycline	10	16.66	17.14
Ciprofloxacin	25	41.66	40
Levofloxacin	15	0	0
Azithromycin	0	0	ND
Cotrimoxazole	45	41.66	51.42
Amoxicillin	40	66.66	51.42
Amoxiclav	10	8.33	ND
Ceftriaxone	30	33.33	51.42
Vancomycin	ND	ND	0
Gentamycin	45	16.66	20
Ceftazidime	35	8.33	8.57
Imepenam	0	ND	0
Piperazillin-tazobactam	5	8.33	5.71

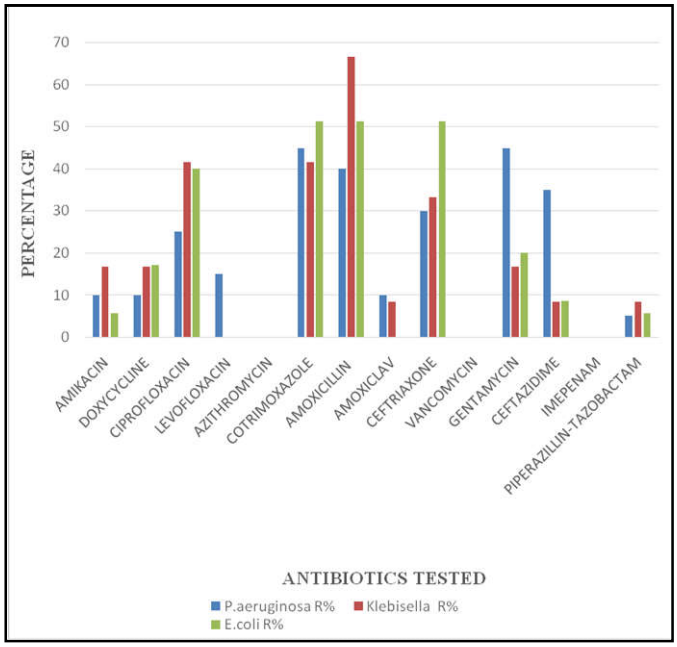

Fig. 14. Antibiotic resistance pattern of Gram Negative organism

Distribution of Route of administration

Table 15 show distribution of route of administration. The antibiotics were given IV as well as orally, sometimes both routes were preferred. Among this IV (91 cases) route was most commonly preferred.

Table 15. Distribution of Route of administration

Route of administration	No. of cases	%
IV	91	65.94
Oral	43	31.15
Both	4	2.89

DISCUSSION

The study was carried out at Karuna Medical College Hospital, Chittur, over a period of 5 months from November 2015 to April 2016. During the entire period, a total of 138 patients were included of these, 71.01% (n=98) were males as compared to 28.98% (n=40) were female. (Figure 1.1, Table 1.1), Which is contradictory to other studies, the slight difference in the number of males to females with wound infection is due to the social behavior where males are given superiority to the females, and if contacted disease are brought immediately to hospitals in comparison to female for treatment in India and the results are similar to study conducted by Muhammed *et al.* (2013) In the present study, wound infections are more in the age group, 40 to 49 years and is 26.81%(n=37) followed by an age group of 50-59 years 24.63% (n=34). (Figure1. 2, Table 1.2). An age group above 40 years are associated with the risk of developing wound infections and the results are consistent with that of Urvish Trivedi *et al.* (2014) study which showed that age greater 40 are associated with wound infections and this may be due to the presence of co Morbidities like DM at advanced age. Diabetes mellitus is most common risk factor in both males

57.24% (n=79). Hypertension is found to be the second most leading risk factor for wound infections 22.26% (n=31). The gender wise distribution of risk factors suggest that Diabetes mellitus is the predominant risk factor in males 61.22% (n=60), and 47.5% (n=19) in females respectively (Figure1.3, Table 1.3) and is also associated with delayed wound healing as in Shin Yee Wong *et al*. study (2015) which showed the presence of systemic diseases as co morbidities including Diabetes Mellitus, Hypertension, and chronic venous disease respectively.

The most common site of infection is found to be leg 37.68% (n=52) followed by foot 35.5% (n= 49). (Figure 1.4, Table 1.4) shown the co- association with the study Michele Cezimbra Perim *et al*. (2015) where Diabetic foot ulcers were seen mostly among the wound infections. Majority of the wound infections were diagnosed with Diabetic foot ulcer 39.85% (n= 55), followed by Non diabetic ulcers 22.46% (n= 31) and diabetic gangrene 9.42% (n= 13), (Figure 1.5, Table 5). Since Diabetic foot ulcers are colonized by pathogenic bacteria that may predispose a susceptible patient to a lower extremity infection as similar to a study by Michele Cezimbra Perim *et al*. (2015). Mojtaba Anvarinejad *et al*.,[(46)] Moderately severe infections were observed mostly 50.72% (n=70) followed by severe infections 43.47% (n=60) and mild infections were less frequently observed 5.79% (n=8). (Figure1.6, Table 1.6). Among the 138 samples, 124 positive cultures were obtained. The bacteriological study of patients revealed that *Staphylococcus aureus* were the most frequent microorganisms isolated 28.98% (n=40) followed by *E.coli* 25.36% (n=35), *Pseudomonas aeruginosa*14.49% (n=20), *CoNS* 12.31% (n=17) and *Klebisella spp* 8.69% (n=12) were also found out. (10) (Figure 1.7, Table 1.7). The result is consistent with the result of Manikandan *et al*., study (2013), Azene *et al*. (2011), Reiye Esayas Mengesha *et al*., (2014) The infections were predominantly due to gram negative bacteria 54.02% (n=67) than gram positive bacteria 45.96% (n=57) (Figure 1.8, Table1.8). which was found similar to Reiye Esayas Mengesha *et al*. (2014) in which the Gram negative cocci was found predominant. Other studies have reported that Gram-positive bacteria were predominant in particular regions. These results suggest, in part, differences in the type and severity of infections. Michele Cezimbra Perim *et al*. (2015) Among the gram positive bacteria, *Staphylococcus aureus* and *CoNS* were isolated. *Staphylococcus aureus* was predominant by 70.17% (n=40), and *CoNS*29.82% (n=17) (Figure 1.9, Table 1.9), as in Shin Yee Wong *et al*., study. (2015) In which *S.aureus*was the most abundant Gram positive cocci.

In case of gram positive bacteria, *S.aureus* was found to be highly sensitive to Vancomycin (55%) followed by Doxycycline 42.5% and Cotrimoxazole 42.5%.Most of the *CoNS* exhibited sensitivity to Vancomycin 58.83% and Doxycycline 41.17% and Cotrimoxazole 41.17%. (Figure1.10, Table1.10). Among the gram positive bacteria, *S.aureus* was highly resistanttowards Cotrimoxazole (32.5%) followed by Amoxicillin and Ceftadizime 17.5%.*CoNS* showed high resistance towards Cotrimoxazole 35.24%, Ciprofloxacin 23.52%, and Amoxicillin + Clavulanate 17.64% respectively. (Figure1.11, Table1.11).The sensitivity pattern of the gram positive cocci are similar to that of the results of Reiye Esayas Mengesha *et al*. (2014) Reham Dwedar *et al*. (2015), which shows that Vancomycin is most effective agent and with minimal resistance towards *Staphylococcus aureus* and *CoNS.* The commonest isolates among the gram negative bacteria's were, *Escherichia. Coli*52.23% (n=35) and *Pseudomonas aeruginosa* 29.85% (n=20), followed by *Klebisella spp* 17.91% (Figure1.12, Table1.12). Lalithambigai *et al*. (2014) study also has similar results which state that *Escherichia. Coli*is the most predominant Gram negative organism isolated from infectious sites. Among the Gram negative organisms, *E.coli* was found to be mostly sensitive to Amikacin 74.2% followed by Gentamycin 48.57%. *P.aeruginosa* was highly sensitive to Amikacin 55%, Ciprofloxacin and Piperazillin + Tazobactamboth by 35%. *Klebisella spp* was found to be mostly sensitive towards, Amikacin 66.66%, Levofloxacin 58.33%and Gentamycin by 41.66%. (Figure1.13, Table1.13). The resistance pattern of E.coli suggests that, it is mostly resistant towards Amoxicillin, Ceftriaxone and Cotrimoxazole by 51.42%. *P.aeruginosa*, it is found highly resistant to Gentamycin and Cotrimoxazole by 45% followed by Amoxicillin 40% (Figure1.14, Table1.14). The organism, *Klebseilla spp*also showed resistance towards Amoxicillin 66.66%, followed by Cotrimoxazole and Ciprofloxacin by 41.66%. (16) (Figure1.12, Table1.12). Reham Dwedar *et al*. (2015) study also put forth similar resultsindicating that the isolated Gram negative organisms were susceptible to Amikacin and highly resistant to Amoxicillin. (Figure1.14, Table1.14) In case of Gram positive bacteria, all the isolated organisms were highly sensitive to Vancomycin, Doxycycline, and Amikacin respectively and resistant towards Cotrimoxazole, Amoxicillin, and Ceftadizime respectively. The susceptibility pattern of gram negative organisms suggests that all gram negative organisms were sensitive towards Amikacin, Gentamycin and Ciprofloxacin respectively. All the gram negative organisms exhibited resistance towards Amoxicillin, Cotrimoxazole and Ceftriaxone respectively. The most preferred route of administration was found to be intravenous route 65.94 % (n=91) followed by oral route 31.15% (n=43) and a combination of oral and intravenous route 2.89% (n=4) respectively. (Table 1. 15) The study did not isolate strict anaerobes bacteria and fungi, which could have increased the number of bacterial isolates reported as negative cultures. The results are similar to that of Michele Cezimbra Perim *et al*. (2015) study in which anaerobes was not isolated due to limited facilities. The antimicrobial sensitivity pattern found out suggests the need of culture and sensitivity testing to avoid excessive antibiotic therapy that promotes the resistance. Lalithambigai *et al*. (2014), Reiye Esayas Mengesha *et al*. (2014)

Conclusion

Gram negative organisms were found to be the most predominant from the isolated cultures .In our study, the most prevalent organism was found to be *S.aureus* followed by *E.coli, P.aeruginosa, CoNS, and Klebisella spp*. Gram negative organism was found more predominant in wound infections. Although we can not specify an appropriate treatment regimen, considering the results it can be suggested that, for Gram positive organisms, Glycopeptide antibiotic Vancomycin is highly effective, followed by Doxycycline and

Amikacin and Imipenem also. And for gram negative organisms Amikacin, Gentamycin, followed Ciprofloxacin was found to be highly effective. In our study, the antimicrobial susceptibility pattern also reveals the resistance pattern of the organisms towards the drugs tested and it suggest that, most of the gram positive organisms are resistant towards commonly prescribed antibiotics like Amoxicillin, Cotrimoxazole and Ceftriaxone. And Cotrimoxazole, Amoxicillin, and Ceftadizime, was found to be ineffective for the gram negative microorganism. No resistance was offered by gram positive organisms towards Imipenem because it was prescribed in a few cases only. This could be explained by low prescription of Imipenem for infected patients. This suggests the need to avoid excessive antibiotic therapy that promotes resistance. The previous antibiotic therapy with broad spectrum antibiotics, irrational use of antibiotics etc. has contributed to the bacterial resistance. Thus the periodic surveillance of bacteria and antibiotic susceptibility is important to prevent further emergence and spread of resistantbacteria pathogens. Intravenous antibiotic therapy, multiple antibiotics etc. should be strictly prescribed for treating severe infections only. The type of wound, severity pattern, along with the Antibiogram report should also be taken into account for deciding the appropriate choice of therapy. This study gives us an insight to the current state of causative organisms of wound infections and their sensitivity pattern, discourages the indiscriminate use of antibiotics and continued surveillance to prevent further development of bacterial drug resistance. An effective national & state level antibiotic policy along with empirical antibiotic treatment regimen especially for diabetic foot infections should be introduced to preserve the effectiveness of antibiotics and for better patient management.

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