

AETIOLOGY OF SKIN AND SOFT TISSUE INFECTIONS IN CORRELATION WITH BIOCHEMICAL AND PATHOLOGICAL FINDINGS IN PATIENTS ATTENDING NIMS HOSPITAL

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Abstract:

Background: Skin and soft tissue infections (SSTIs) involve microbial invasion of the layers of the skin and underlying soft tissues. They are clinical entities with varying presentation, origin, and severity. SSTIs can range from minor infections like pyoderma to major infections that can be fatal, such as necrotizing fasciitis. Erythematous, oedema, warmth, and discomfort or soreness are the minimal diagnostic requirements. Depending on the degree of the illness, the affected area (such as the hands and legs) may also become dysfunctional. Co morbid conditions in a patient, such as diabetes mellitus and AIDS, can quickly turn a typically moderate illness into a life-threatening hazard. (1) SSTIs provide a variety of clinical problems that demand for management solutions that quickly and accurately separate the instances that need urgent attention and intervention from those that don't, whether they're medical or surgical whereas the correlation will be found between biochemical and pathological finding in patient.

Objective: To find the correlation between biochemical and pathological finding in patients attending NIMS hospital, Jaipur.

Method: Pus culture and investigation is done by the laboratory technician and microbiologist.

Results: The prevalence of SSTIs infection was high in male patients compare with female patients. Bacteria which cause SSTIs infection among all was E.coli. Also S.aureus not detected in the pus sample. Relation between CBC and Electrolytes with that of bacteria cause SSTIs infection shows no such relation. It means no positive relation was detected.

Conclusion: SSTIs infection mainly occurs due to complication of Diabetes mellitus and post surgery. Infection may damage the vital organs also, if it's not cure at time. So, physician and surgeon should take appropriate steps to prevent the infection. Not only physician and surgeon but also management of hospitals & Nursing homes, take look after the hospitals and follow the Hospital Acquired Infections guideline strictly. Health Department of both the state as well as Central should check the measurements taken by hospitals and nursing homes to check SSTIs infections.

Key-words: soft tissue infection, Bacteria, Electrolytes, microbiologist

INTRODUCTION

Skin and soft tissue infections (SSTIs) are caused by bacterial invasion, contact, and deterioration within the skin's barrier function. Hospitalization, disability, and antibiotic use are some typical causes of skin and soft tissue infections. The bulk of practise recommendations don't address viral, fungal, or parasite etiologist because bacteria are the first explanation for SSTIs. The skin barrier is often damaged via a range of techniques, like surgery and physical trauma. SSTIs are caused by an invasion of healthy skin, whereas secondary SSTIs are caused by an infection of skin that has already been damaged by trauma or an underlying condition. Infections are frequently contained, despite the very fact that they'll occasionally spread through the blood or system a lymphatic. Skin and soft tissue infections (SSTIs) involve microbial invasion of the layers of the skin and underlying soft tissues. They're clinical entities with varying presentation, origin, and severity. SSTIs can range from minor infections like pyoderma to major infections that may be fatal, such as necrotizing fasciitis. Erythematous, oedema, warmth, and discomfort or soreness is the minimal diagnostic requirements. Counting on the degree of the illness, the affected area (such as the hands and legs) can also become dysfunctional. Co morbid conditions in a very patient, like diabetes and AIDS, can quickly turn a typically moderate illness into a life-threatening hazard. (1) SSTIs provide a range of clinical problems that demand for management solutions that quickly and accurately separate the instances that require urgent attention and intervention from those who don't, whether they're medical or surgical.

TYPES OF STIs:**Cellulitis**

Cellulitis, a painful, erythematous infection of the dermis and subcutaneous tissues, is characterised by warmth, oedema, and increasing borders. Rarely does cellulitis appear on skin that appears normal; instead, it always appears near skin breaks, like surgical wounds, trauma, tine a infections, or ulcerations. A fever and an increase in white blood cells are possible in patients. Any a part of the body might develop cellulitis. The foremost often affected body areas by cellulitis among the patients within the aforementioned cohort were the legs and digits, which were then followed by the face, foot, hands, torso, neck, and buttocks.

Erysipelas

St. Anthony's fire, commonly referred to as erysipelas, typically manifests as a severely erythematous illness with distinct elevated edges and often accompanying lymphatic streaks. The legs and face are frequent areas. Most cases begin with flu-like symptoms and don't have an initiating wound or skin lesion. Erysipelas is becoming more common, particularly in young children, the elderly, diabetics, alcoholics, and folks with lymphedema or impaired immune systems.

Impetigo

Impetigo is most typically seen in children aged two to 5 years and is assessed as bullous or nonbullous. The nonbullous type predominates and presents with an erosion (sore), cluster of erosions, or small vesicles or pustules that have an adherent or oozing honey-yellow crust. The predilection for the very young is remembered by the common lay misnomer, "infant tigo." Impetigo usually appears in areas where there's a prospect within the skin, like a wound, herpes simplex infection, or maceration related to angular cheilitis, but *Staphylococcus aureus* can directly invade the skin and cause a de novo infection.

Folliculitis

Physical trauma, chemical irritancy, or infection that leads to Folliculitis can all cause the inflammation of hair follicles. The degree of the hair follicle's involvement determines the classification. The foremost typical form of Folliculitis appears as a sensitive or painless pustule that cures without leaving any scars. (25) Frequently, the hair shaft will be seen within the pustule's centre. Any area of the body with hair-bearing skin, including the top, neck, trunk, buttocks, and extremities, may develop multiple or solitary lesions. Rarely do related systemic symptoms or fever exist. the foremost likely pathogen is *S. aureus*, however commensal species including yeast and fungi can occasionally be found, especially in people with impaired immune systems. Usually, these lesions disappear on their own. To hasten healing, topical treatments with erythromycin, clindamycin, mupirocin, or peroxide could be used.

Furuncles and Carbuncles

As a follicular infection develops deeper and spreads outside of the follicle, furuncles and carbuncles form. A furuncle, often called an abscess or boil, could be a walled-off mass of purulent material that develops from a follicle and is painful, erythematous, hard, or fluctuant. These lesions can develop anywhere on the body, but they have an inclination to favour rough surfaces. Before puberty, furuncles seldom ever develop. Carbuncles are a group of diseased hair follicles that typically open and drain through several tracts and take the shape of wide, bloated, erythematous, deep, and painful lumps. Similar lesions are frequently among constitutional symptoms, like fever and malaise, although furuncles are less frequently reported to possess these symptoms.

SUBJECT & strategies

This investigation concerned a cross-sectional study conducted at tertiary care hospital at JAIPUR RAJASTHAN, INDIA. The participants were registered between Gregorian calendar month 2021 and JUN 2022.

STATISTICAL ANALYSIS

The data were analyzed with SPSS twenty one. Numerical variables are conferred because the mean \pm variance (SD). Enumeration knowledge and hierarchic knowledge are conferred as percentages. A P-value < zero.05 was thought-about statistically important.

ETHICS

The study was allotted in accordance with recommendations of the Clinical analysis commission of NIMS school of Paramedical Technology Via letter variety NIMS/IRC/PARA/MLT/2021/002. All folks provided written consent before the beginning of the study. If Pus swab is sent: Collection of Pus Culture: If the wound is comparatively dry, collect the specimen with 2 cotton-tipped swabs moistened with sterile non-bacteriostatic saline. Gently roll the swab over the surface of the wound about 5 times, specializing in a section wherever there's proof of pus or inflamed tissue. Anaerobic culture isn't acceptable

TECHNIQUE:**Preparation of the Smear:****If Pus swab is sent:**

Only one aerobic pus swab: Inoculate the culture media 1st before victimisation the swab to create smears for Gram staining If swabs (one anaerobic and 2 aerobic) are submitted for culture, use the second swab for creating Gram's method If a tissue sample is submitted: build Gram's method from ground tissue.

Collection of blood vessel Blood: 3ml the foremost ordinarily used sites for Vain puncture were the vein within the bend of the elbow.

Collection Procedure: Apply a bandage to the higher arm sufficiently tight to limit the blood vessel flow and build the vein stand out. Sterilize the arm by scouring the chosen vein and web site with seventy fifth alcohol and allowed to dry. Prepare the syringe, typically a 21- gauge needle is suitable for terribly fine veins, press slightly below the puncture web site to anchor the vein. Insert the needle swimmingly with the extent facing upwards, at the angle of thirty degree to the surface of the arm, once the spare amount of blood is collected, bandage is unsnarled and wed of plant fibre at the puncture web site was placed whereas retreating the needle gently. Blood is distributed within the sample tubes prone nata. Complete Blood Count: the blood sample were analysed employing a medicine analyzer (Erba Elite580) playacting medical specialty analysis on blood collected in EDTA tubes. Parameters: CBC: leukocyte, RBC, HGB, HCT, MCV, MCH, MCHC, RDW-CV, RDW-SD, PLT, MPV, PCT, PDW-SD, PDW-CV, P-LCR, P-LCC, DIFF: Neutrophils% , Lymphocytes%, Monocytes%, Eosinophils% and Basophiles%, ALY%, LIC,% NLR
*Research use solely.

Principle of Measurement:

RBC/WBC/PLT: Electrical electrical phenomenon

Electrical electrical phenomenon was the sole machine-driven cell-counting technique till the Nineteen Seventies, once light-scatter cell-counting technology was developed. Today's cell counters ar supported one in all these 2 technologies.

RESULT:

Gender	No. of Patients	Percentage of Patients
Male	170	56.67%
Female	130	43.33%

Table 9: Prevalence of SSTIs according to gender with percentage

In table 9, prevalence of SSTIs infection in gender has been shown and male and female patients are 170 and 130 respectively. The percentage of prevalence is 56.67% for male and 43.33% for female patients.

Age group (in yr)	Number of Patient	Percentage of patient
0-10	4	1.33%
11-20	39	13%
21-30	36	12%
31-40	50	16.67%
41-50	37	12.33%
51-60	49	16.33%
61-70	35	11.67%
71-80	21	7%
81-90	20	6.67%

Table 10: SSTIs infections according to different age group patients with percentage

In table 10 , prevalence of SSTIs infection in different aged group has been shown and between 0-10 year, 4 patients have SSTIs infection. Then, 11-20 year,37 patients and between 21-30 year, the number is 36.Between 31-40 year and 41-50 year, the prevalence is 50 and 37 respectively. 49 patients are between 51-60 years, Also, 35 included between 61-70 year. Between 71-80 year patients, the number is 21 and between 81-90 year, the value is 20. The percentage of SSTIs infection patients in different aged group are 1.33% (0-10 yr.),13% (11-20 yr.),12% (21-30 yr.),16.67% (31-40 yr.),12.33% (41-50 yr.),16.33% (51-60 yr.),11.67% (61-70 yr.), 7% (71-80 yr.) and 6.67% (81-90 yr.).

S.No.	Microorganism	Number
1.	<i>E.coli</i>	158
2.	<i>K.Pneumonia</i>	43

3.	<i>Enterobacter Aerogenes</i>	19
4.	<i>Citrobacter Freundii</i>	18
5.	<i>Proteus Mirabilis</i>	19
6.	<i>Proteus Vulgaris</i>	20
7.	<i>E.Clocae</i>	23
8.	<i>Staphylococcus Aureus</i>	00

Table 11: Distribution of SSTIs infection according to Microorganism

In table-10 it's shows that prevalence of bacteria caused SSTIs infections. *E.coli* (158), highest prevalence which cause SSTIs infections, after that, *K.Pneumonia* (43) and then followed by *E.Clocae* (23). *E.Aerogenes* (19) and *Proteus Vulgaris* (20) both cause SSTIs infection. Also, bacteria such as *Citrobacter Freundii* and *Proteus Mirabilis* have 18 and 19 respectively. But *Staphylococcus Aureus* does not found in any sample.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	10.88±0.96
WBC (per cu.mm)	7.32±1.90
Platelets (lakhs)	298393.84±84239.21
RBC (million/cu.mm.)	4.66±0.26
PVC (%)	43.8±6.6
MCV (%)	87.2±5.8
MCH (pg)	31.0±3.3
MCHC (g/dl)	32.3±1.2
RDW (%)	12.4±1.5
Sodium (mEq/L)	140.3±3.27
Calcium (mg/dl)	10.16±0.56
Potassium (mg/L)	4.29±0.46
Chloride (mEq/L)	101.0±3.04
Phosphate (mg/dl)	3.55±0.55
Magnesium (mg/dl)	1.99±0.31
Urea (mg/dl)	14.84±2.7
Creatinine (mg/dl)	0.93±0.14

Table 12: Comparison study of CBC Count and E.coli in SSTIs Infection

In table no.12, the relation between CBC and E.coli are shown, in case of SSTIs infection caused due to E.coli Hb level is 10.88±0.96 g/dl. Whereas, WBC is 7.32±1.90 cu.mm. Platelets level is 298393.84±84239.21 lakhs. RBC level is 4.66±0.26 million/cu.mm. The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 43.8±6.6% and 87.2±5.8% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 31.0±3.3pg, 32.3±1.2gdl and 12.4±1.5% respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 140.3±3.27 mEq/L, 10.16±0.56 mg/dl, 4.29±0.46 mg/dl, 101.0±3.04 mEq/L, 3.55±0.55 mg/dl and 1.99±0.31 mg/dl respectively. The level of Urea and Creatinine are 14.84±2.7 mg/dl and 0.93±0.14 mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	11.14±0.93
WBC (per cu.mm)	7.08±1.84
Platelets (lakhs)	286396.5±88431.72
RBC (million/cu.mm.)	4.64±0.30
PVC (%)	41.5±6.6
MCV (%)	88.9±6.4
MCH (pg)	30.6±3.2
MCHC (g/dl)	32.2±1.3
RDW (%)	12.5±1.5
Sodium (mEq/L)	141.3±2.97
Calcium (mg/dl)	10.12±0.55
Potassium (mg/L)	4.19±0.41
Chloride (mEq/L)	99.56±2.12
Phosphate (mg/dl)	3.59±0.65
Magnesium (mg/dl)	2.03±0.25
Urea (mg/dl)	16.23±2.74
Creatinine (mg/dl)	0.92±0.16

Table 13: Comparison Study of CBC and *K.Pneumonia* SSTI Infection

In table no.13, the relation between CBC and *K.Pneumonia* are shown, in SSTIs infection. The Hb level is 11.14±0.93g/dl. Whereas, WBC is 7.08±1.84 cu.mm. Platelets level is 286396.5±88431.72 lakhs.RBC level is 4.64±0.30million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 41.5±6.6% and 88.9±6.4% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 30.6±3.2pg, 32.2±1.3g/dl and 12.5±1.5 % respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 141.3±2.97mEq/L, 10.16±0.56 mg/dl, 4.19±0.41mg/dl, 99.56±2.12mEq/L, 3.59±0.65mg/dl and 2.03±0.25mg/dl respectively. The level of Urea and Creatinine are 16.23±2.74mg/dl and 0.92±0.16mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	11.13±0.99
WBC (per cu.mm)	8.28±1.61
Platelets (lakhs)	275200.6±83303.6
RBC (million/cu.mm.)	4.88±0.13
PVC (%)	44.3±3.8
MCV (%)	85.9±5.2
MCH (pg)	29.7±2.5
MCHC (g/dl)	31.0±0.6
RDW (%)	11.4±1.0
Sodium (mEq/L)	139.3±3.57
Calcium (mg/dl)	9.95±0.64
Potassium (mg/L)	4.16±0.27
Chloride (mEq/L)	100.89±3.11
Phosphate (mg/dl)	3.65±0.5
Magnesium (mg/dl)	2.06±0.35
Urea (mg/dl)	14.54±2.89
Creatinine (mg/dl)	0.98±0.15

Table 14: Comparison Study of CBC Count and *Enterobacter Aerogenes* in SSTIs Infection

In table no.14, the relation between CBC and *Enterobacter Aerogenes* are shown, in SSTIs infection. The Hb level is 11.13±0.99g/dl. Whereas, WBC is 8.28±1.61 cu.mm. Platelets level is 275200.6±83303.6 lakhs.RBC level is 4.88±0.13million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 44.3±3.8% and 85.9±5.2% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 29.7±2.5pg, 31.0±0.6gdl and 11.4±1.0% respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 139.3±3.57mEq/L, 9.95±0.64mg/dl, 4.16±0.27mg/dl, 100.89±3.11mEq/L, 3.65±0.5mg/dl and 2.06±0.35mg/dl respectively. The level of Urea and Creatinine are 14.54±2.89mg/dl and 0.98±0.15mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	10.75±1.03
WBC (per cu.mm)	7.99±2.02
Platelets (lakhs)	300999.3±88816.34
RBC (million/cu.mm.)	4.73±0.24
PVC (%)	40.6±6.3
MCV (%)	92.6±4.0
MCH (pg)	31.0±2.2
MCHC (g/dl)	32.3±1.0
RDW (%)	12.7±1.6
Sodium (mEq/L)	140.9±3.55
Calcium (mg/dl)	10.15±0.64
Potassium (mg/L)	4.05±0.3
Chloride (mEq/L)	100.86±2.6
Phosphate (mg/dl)	3.58±0.54
Magnesium (mg/dl)	2.04±0.33
Urea (mg/dl)	14.91±2.91
Creatinine (mg/dl)	0.97±0.18

Table 15: Comparison Study of CBC Count and *E. Clocae* in SSTIs Infections

In table no.15, the relation between CBC and *E. Clocae* are shown, in SSTIs infection. The Hb level is 10.75±1.03g/dl. Whereas, WBC is 7.99±2.02 cu.mm. Platelets level is 300999.3±88816.34 lakhs.RBC level is 4.73±0.24million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 40.6±6.3% and 92.6±4.0% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 31±2.2pg, 32.3±1gdl and 12.7±1.6% respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 140.9±3.55mEq/L, 10.15±0.64mg/dl, 4.05±0.3mg/dl, 100.86±2.6mEq/L, 3.58±0.54mg/dl and 2.04±0.33mg/dl respectively. The level of Urea and Creatinine are 14.91±2.91mg/dl and 0.97±0.18mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	10.57±0.56
WBC (per cu.mm)	6.72±2.07
Platelets (lakhs)	358172±80253.48
RBC (million/cu.mm.)	4.75±0.3
PVC (%)	42.3±4.3
MCV (%)	91.7±4.4
MCH (pg)	29.4±2.2
MCHC (g/dl)	31.1±0.6
RDW (%)	13±0.6
Sodium (mEq/L)	138.2±2.48
Calcium (mg/dl)	10.24±0.52
Potassium (mg/L)	99.95±3.11
Chloride (mEq/L)	3.41±0.52
Phosphate (mg/dl)	1.86±0.24
Magnesium (mg/dl)	15.12±2.37
Urea (mg/dl)	16.23±2.74
Creatinine (mg/dl)	0.92±0.16

Table 16: Comparison Study of CBC Count and *Citrobacter Freundii* in SSTIs Infection

In table no.16, the relation between CBC and *Citrobacter Freundii* are shown, in SSTIs infection. The Hb level is 10.57±0.56g/dl. Whereas, WBC is 6.72±2.07 cu.mm. Platelets level is 358172±80253.48 lakhs.RBC level is 4.75±0.3million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 42.3±4.3% and 91.7±4.4% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 29.4±2.2pg, 31.1±0.6gdl and 13±0.6% respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 138.2±2.48mEq/L, 10.24±0.52mg/dl, 99.95±3.11mg/dl, 3.41±0.52mEq/L, 1.86±0.24mg/dl and 15.12±2.37mg/dl respectively. The level of Urea and Creatinine are 16.23±2.74mg/dl and 0.92±0.16mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	10.78±1.11
WBC (per cu.mm)	6.15±1.72
Platelets (lakhs)	302088.7±64478.86
RBC (million/cu.mm.)	4.45±0.12
PVC (%)	45.3±5.0
MCV (%)	87.0±3.6
MCH (pg)	31.7±1.9
MCHC (g/dl)	32.2±0.9
RDW (%)	11.5±0.8
Sodium (mEq/L)	139.7±2.98
Calcium (mg/dl)	10.03±0.52
Potassium (mg/L)	4.21±0.49
Chloride (mEq/L)	100.03±3.42
Phosphate (mg/dl)	3.49±0.71
Magnesium (mg/dl)	2.16±0.16
Urea (mg/dl)	13.6±2.28
Creatinine (mg/dl)	1.01±0.14

Table 17: Comparison Study of CBC Count *Proteus Mirabilis* in SSTIs Infection

In table no.17, the relation between CBC and *Proteus Mirabilis* are shown, in SSTIs infection. The Hb level is 10.78±1.11g/dl. Whereas, WBC is 6.15±1.72 cu.mm. Platelets level is 302088.7±64478.86 lakhs.RBC level is 4.45±0.12 million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 45.3±5.0 % and 87.0±3.6% respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 31.7±1.9pg, 32.2±0.9gdl and 11.5±0.8% respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 139.7±2.98mEq/L, 10.03±0.52mg/dl, 4.21±0.49mg/dl, 100.03±3.42mEq/L, 3.49±0.71mg/dl and 2.16±0.16mg/dl respectively. The level of Urea and Creatinine are 13.6±2.28mg/dl and 1.01±0.14mg/dl respectively.

Parameter	Concentration (Mean±SD)
Haemoglobin (gm/dl)	10.37±0.99
WBC (per cu.mm)	8.77±1.53
Platelets (lakhs)	343850±39064.3
RBC (million/cu.mm.)	4.78±0.18
PVC (%)	40.4±4.6
MCV (%)	87.4±5.3
MCH (pg)	31.3±2.8
MCHC (g/dl)	31.6±0.9
RDW (%)	11.7±1.2
Sodium (mEq/L)	142.0±2.78
Calcium (mm/dl)	9.93±0.40
Potassium (mm/L)	4.21±0.48
Chloride (mEq/L)	100.58±2.79
Phosphate (mg/dl)	3.47±0.6
Magnesium (mg/dl)	1.84±0.19
Urea (mg/dl)	14.97±2.49
Creatinine (mg/dl)	1.03±0.18

Table 18: Comparison Study of CBC Count *Proteus Vulgaris* in SSTIs Infection

In table no.18, the relation between CBC and *Proteus Vulgaris* are shown, in SSTIs infection. The Hb level is 10.37±0.99 g/dl. Whereas, WBC is 8.77±1.53 cu.mm. Platelets level is 343850±39064.3 lakhs.RBC level is 4.78±0.18 million/cu.mm.The value of PCV (Packed Cell Volume) and MCV (Mean Corpuscular Volume) are 40.4±4.6% and 87.4±5.3 % respectively. Also, level of MCH (Mean Corpuscular Haemoglobin), MCHC (Mean Corpuscular Haemoglobin Concentration) and RDW (Red blood Cell Distribution Width) are 31.3±2.8 pg, 31.6±0.9 gdl and 11.7±1.2 % respectively. In case of electrolytes, Sodium, Calcium, Potassium, Chloride, Phosphate and Magnesium are 142.0±2.78mEq/L, 9.93±0.40mg/dl, 4.21±0.48mg/dl, 100.58±2.79mEq/L, 3.47±0.6mg/dl and 1.84±0.19mg/dl respectively. The level of Urea and Creatinine are 14.97±2.49mg/dl and 1.03±0.18mg/dl respectively.

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REFERENCES

1. Swartz MN. Clinical practice. Cellulitis. *N Engl J Med*. 2004;350:904–12.
2. Addison K, May. Skin and Soft Tissue Infections; *Surg Clin N Am* 89 (2009), 403–420.
3. Kielhofner MA, Brown B, Dall L. Influence of underlying disease process on the utility of cellulitis needle aspirates. *Arch Intern Med*. 1988; 148:2451-2.
4. Leppard BJ, Seal DV, Colman G, Hallas G. The value of bacteriology and serology in the diagnosis of cellulitis and erysipelas. *Br J Dermatol*. 1985; 112:559-67.
5. Epperly TD. The value of needle aspiration in the management of cellulitis. *J Fam Pract*. 1986; 23:337-40.
6. Gilbert DN, Moellering RC, Sande MA. The Sanford guide to antimicrobial therapy 2000. 30th ed. Hyde Park, Vt.: Antimicrobial Therapy, 2000:39.
7. Trubo R, Bisno AL, Hacker SM, Roaten SP. Today's strategies for bacterial skin infections. *Patient Care*. 1997; 31:78-94.
8. Olszewski WL. Episodic dermatolymphangioadenitis (DLA) in patients with lymphedema of the lower extremities before and after administration of benzathine penicillin: a preliminary study. *Lymphology*. 1996; 29:126-31.
9. Schwartz GR, Wright SW. Changing bacteriology of periorbital cellulitis. *Ann Emerg Med*. 1996; 28:617-20.
10. Barone SR, Aiuto LT. Periorbital and orbital cellulitis in the *Haemophilus influenzae* vaccine era. *J Pediatr Ophthalmol Strabismus*. 1997; 34:293-6.
11. Ambati BK, Ambati J, Azar N, Stratton L, Schmidt EV. Periorbital and orbital cellulitis before and after the advent of *Haemophilus influenzae* type B vaccination. *Ophthalmology*. 2000; 107:1450-3.
12. Weiss A, Friendly D, Eglin K, Chang M, Gold B. Bacterial periorbital and orbital cellulitis in childhood. *Ophthalmology*. 1983; 90:195-203.