

SUMMARY

In present study 150 wound samples from patients visiting Shaikh Zayed Hospital, Lahore were studied. Isolation and identification of organisms were done by using standard operating procedures in laboratory. Antimicrobial sensitivity testing was performed by disc diffusion method in accordance with National Committee for Clinical Laboratory Standards (NCCLS) guidelines.

Among the patients studied, 101 (67.33%) were male and 49 (32.66%) were female. Only 64 (42.66%) patients were not infected as no growth was observed in their pus samples. Among these non-infected individuals 27 (18%) were female and 37 (24.66%) were male.

Bacterial growth was observed in 86 (57.33%) samples which were 24(16%) female and 62 (41.33%) were male patients.

Single bacterial pathogens were isolated from 70 (46.66%) patients and 16 (10.66%) were with more than one bacteria. Total 120 bacterial pathogens were isolated from 86 samples.

When the individual pathogens were considered *Staphylococcus* was isolated from 32 (21.33%), *Coliform* from 45 (30%), *Proteus* from 7 (4.66%), *Pseudomonas* from 9(6%), *Streptococcus* from 4(2.66%), *Bacillus* from 2(1.33%), whereas only one (0.66%), isolate of each *Enterococcus*, *E.coli* and *Klebsiella* was found from wound pus samples.

The sensitivity of these bacterial isolates against different antibiotics were: *Staphylococcus* was found to be sensitive to Vancomycin followed by Chloramphenicol, Nitrofurantion and Gentamicin. Penicillin and Rifampin showed opposite activity in male and female patients. Ampicillin, Tetracycline and Trimethoprim + Sulphamethoxazole were resistant to *Staphylococcus*. *Coliform* was sensitive to Imipenem followed by Amikacin, Tazobactam + Piperacillin, Chloramphenicol, Ciprofloxacin and resistant to Cephadrine, Cefuroxime, Ampicillin and Trimethoprim + Sulphamethoxazole.

Proteus was isolated only from male patients and were 100% sensitive to Imipenem and Tazobactam + Piperacillin followed by Amoxicillin + Clavulanic acid. *Proteus* showed high resistance to Cefixime, Cefuroxime, Cephadrine and Trimethoprim + Sulphamethoxazole. *Pseudomonas* was sensitive to Aztreonam, Tazobactam + Piperacillin followed by Imipenem and Ciprofloxacin. It was resistant to Ampicillin, Amoxicillin + Clavulanic acid, Cefixime, Cefuroxime, Cephadrine and Chloramphenicol.

Streptococcus was found sensitive to Amoxicillin + Clavulanic acid, Chloramphenicol, Imipenem and Vancomycin followed by Cefixime, Cefuroxime, Cephadrine, Ciprofloxacin, Erythromycin, Gentamicin, Nitrofurantion, Rifampin, Tazobactam + Piperacillin and resistant to Tetracyclin, Penicillin and Ampicillin. *Bacillus* was found to be sensitive for Amikacin, Chloramphenicol, Ciprofloxacin Imipenem and Trimethoprim + Sulphamethoxazole. It was resistant to Ampicillin and Azteronam.

Enterococcus was sensitive to Chloramphenicol and found to be resistant to all antibiotics applied. *E.coli* was sensitive to most of drugs used and resistant to only Cephadrine and Trimethoprim + Sulphamethoxazole. *Klebsiella* was found to be sensitive to most applied antibiotics and resistant to Amoxicillin, Cephadrine and Trimethoprim + Sulphamethoxazole.

When ANOVA was applied on the zone of inhibitions, a significant difference was observed among the different bacterial strains and the antibiotics used at $P < 0.99$.

From the present study, it is concluded that *Staphylococcus*, *Coliform*, *Proteus* and *Pseudomonas* are the prominent infectious agents in human wound infections. *Staphylococcus* is sensitive to Vancomycin and Chloramphenicol. For the Gram negative bacterial isolates, *Coliform*, *Proteus* and *Pseudomonas*, Imipenem is a drug of choice to inhibit the growth and is followed by Tazobactam + Piperacillin, Aztreonam and Amikacin. As the unlimited use of antibiotics results in production of drug resistant bacteria. So there is a need of conducting such studies to evaluate the locally existing pus pathogens and to develop new products and therapeutic procedures for their inhibition.