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Sustained release of amoxicilline trihydrate for oral drug delivery system

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Biodegradable macro-particles may develop improved drug delivery system to gastrointestinal tract, for treatment of *Helicobacter pylori*, included peptic ulcers. Amoxicillin trihydrate macrocapsules have the ability to produce thus effect for extended period, were prepared with beeswax as matrix using solvent evaporation techniques, to produce there different 25% and 50% coating macrocapsules. Macro particles were examined by optical microscopy and showed spherical shape. The size of particles was determined by using sieve technique and the average size found 350 mm for all batches. IR study was carried out to check the compatibility between the selected polymer bees wax and amoxicillin trihydrate. This study was performed to assure that there is complete physical entrapment of the drug into the polymer without any mutual interaction. Initial *in vitro* experiments were under taken to examine the degradation rate in phosphate buffer at 37°C, PH 5.2, the process was followed up to 8 hours by which 34% and 75% of particles mass had eroded for 25% and 50% coating macro capsules respectively. However the release of amoxicillin trihydrate occurred gradually sustained release 88% and 47% up to eight hours for 25% and 50% coating batches respectively compared to the control of amoxicillin which completely released from the first hour. The macro-particles and control were subjected to microbiological test, the amoxicillin trihydrate and the formulations were effective against non-pathogenic bacterial strains of *Staphylococcus aureus* and *E.coli* but not effective to more resistance bacteria such as *P. aeruginosa* microbiological test.

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Twelve years analysis of bacterial isolates and their antibiotics sensitivity in a tertiary care burns unit

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The aim of this study was to review the changes in distribution of bacterial populations and their antibiotic sensitivity over 12 years in a tertiary care burn unit. Understanding the periodic variation of isolated microorganisms and their antibiotic sensitivity helps in selecting the appropriate antimicrobial therapy before culture and sensitivity is reported. It also aids the design of antibiotics protocols. The study was retrospective. The data were obtained from the computerized hospital medical record system and the burn unit records. Overall, *Pseudomonas aeruginosa* was the most commonly isolated microorganism followed by *Staphylococcus aureus*, *Meticillin-resistant Staphylococcus aureus* (MRSA), and the genus *Acinetobacter*. *Acinetobacter* isolation rose rapidly and became more prevalent than *P. aeruginosa* over the last three years. Other organisms became isolated more frequently, such as *Klebsiella pneumoniae*, but their overall prevalence was low. *Pseudomonas* species frequency of isolation declined. *P. aeruginosa*, MRSA, and other microorganisms showed increasing sensitivity to a number of antibiotics. MRSA remained highly sensitive to vancomycin. *Acinetobacter* showed high resistance to all antibiotics tested except colistin. *K. pneumoniae* was highly resistant to most of the antibiotics tested except the carbapenems, but the resistance to carbapenems increased over time.

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