

Why Is Individually Designed Parenteral Therapy Important During Emergency Events?

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The pharmacy of the University Medical Centre (UMC) prepares individually tailored therapy for parenteral use. All types of individual therapy require a high level of professional knowledge and sophisticated equipment. Parenteral therapy used in pediatrics, mixtures for total parenteral nutrition (TPN), cytotoxic parenteral therapy, and mixtures of analgesics for pain therapy are prepared in aseptic areas in which there is no risk of contamination with micro-organisms, mechanical particles, or pyrogens. The preparation under aseptic conditions is carried out in accordance with the current regulations of the European Pharmacopoeia.

Parenteral solutions of drugs for pediatric patients are prepared in individually adjusted doses by the pharmaceutical technician in the pediatric unit. As there is a lack of approved medicinal products in dosage forms for children, the whole responsibility for correct pediatric parenteral therapy lies with the pharmaceutical and the medical staff. Total parenteral nutrition (TPN) is the intravenous supply of nutrients, electrolytes, microelements, and vitamins to the patient in quantities tailored to his or her individual needs. Some solutions of electrolytes, nutrients, and microelements required for TPN admixtures are prepared in the hospital pharmacy.

Cytotoxic preparations for parenteral administration are produced using a centralized, validated procedure and are designed individually. Despite exceptional conditions due to an emergency event, proper parenteral therapy must be ensured, although in a given situation, the number of qualified personnel may be too small and the number of patients requiring treatment too high.

Keywords: administration, parenteral; cytotoxic agents; pediatrics; pharmacy; preparation; regulations; total parenteral nutrition
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Design for the New Production Line for Tablets in the Galenical Laboratory Unit of Lekarna Ljubljana

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Galenical laboratory units of public pharmaceutical institutions are being transformed from supporting units of their pharmaceutical institutions into units for small-series production of pharmaceutical products. Increases in production also mean development in the sense of improving quality of products and services. This is why galenical laboratory units are being developed in the direction of fulfilling the requirements of good manufacturing practice that is compulsory for all manufacturers. Our work is coordinated to the utmost extent with the requirements of good manufacturing practice: the biggest problem in this respect, however, are validations of manufacturing procedures, since certain stages of manual work include manufacturing processes. Nevertheless, all the required stages for machinery design have been carried out for the purpose of the

planned investment (purchase of a new machine for the production of tablets).

Keywords: laboratories, galenical; investment; manufacture; pharmaceuticals; production; quality assurance
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Finasteride and Prazosin Mixed Therapy in Patients with Benign Prostatic Hyperplasia

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Benign prostatic hyperplasia (BPH) is the most common cause of urinary obstruction. Medical management of BPH includes anti-androgens and alpha-adrenergic blockers. This study compared the efficacy of a mixed therapy of finasteride, as a 5-alpha reductase inhibitor, in combination with prazosin, as a specific alpha 1-adrenergic receptor blocker (Group F+P), and finasteride alone (Group F) on obstructive/stimulative symptoms of BPH. Test groups were made up of 40 men, aged 60 ± 6 (mean ± 1sd) years, who were assigned into one of two equal groups. Prazosin, 1 mg, and finasteride, 5 mg daily, and the same dose of finasteride alone, were prescribed to Group F+P and Group F, respectively, for three months. At three months, the mean value for prostatic volume was reduced by 16.5% ($p < 0.05$) for Group F+P, and 11.3% ($p = ns$) for Group F. Obstructive/stimulative symptom scores were reduced by 65.3% ($p < 0.0001$) and 68.8% ($p < 0.0007$) for Groups F+P and F, respectively. There was no correlation between the changes in mean prostatic volume and obstructive/stimulative symptom scores ($r = -0.74$). The most frequent complications were impotence ($n = 17$), loss of libido ($n = 17$), reduced ejaculate volume ($n = 16$), and dry mouth ($n = 15$). The amount of these incidences did not vary between the two groups.

It was concluded that the combination of finasteride and prazosin might accentuate the process of prostatic volume reduction in comparison with finasteride alone in BPH. The measure did not increase the incidence of complications; therefore, it may be a suitable alternative to more invasive therapeutic approaches.

Keywords: benign prostatic hypertrophy; finasteride; prazosin; side effects; symptoms; treatment; volume reduction
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Biological and Chemical Warfare

Animal Surveillance as an Indicator of Biological Warfare

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Animal surveillance can be useful within medical intelligence to enhance prior knowledge, detect biological and chemical warfare (BW, CW) incidents, and collect diagnostic and forensic evidence.

It is particularly useful where clinical signs appear in animals before the human population, allowing instigation of force protection measures; in simultaneous human/ animal disease, allowing early definitive diagnosis, for example, by post-mortem examination of dead and/or euthanized animals. The temporo-spatial distribution of disease within the animal population may contribute to the identification of the biological agent (BA), and may provide some indication of the persistence of the threat following delivery of the BA.

After an undetected BA attack the first sign of an event may be the appearance of casualties (military, civilian, human or animal). Epidemiological surveillance of both humans and animals would allow early recognition of a disease outbreak, thus allowing protection of troops who have not yet developed symptoms. Specific veterinary considerations that may point to BW attack include: post-munitions disease, time course of disease, spatial distribution of disease, host range, geographical range, predisposing conditions, route of infection, heterogeneity of infection, and background disease incidence. Confirmation of causative agent by etiological diagnosis is essential.

BioMedAC is developing a STANAG on Rapidly Deployable Outbreak Investigation Teams (RDOIT) that may incorporate appropriate specialists such as a veterinarian. The UK is developing a concept of animal surveillance for routine deployment.

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Keywords: animal surveillance; biological agents; Rapidly Deployable Outbreak Investigation Teams (RDOIT)
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Plenary Session

Training of Medical Staff in the Management of Biological/Chemical Warfare Psychological Casualties

Group Captain F.B. McManus

Biological/Chemical Warfare (BCW) agents are weapons of terror. Their psychological impact greatly outweighs their physical effects. Psychological casualties will greatly outnumber physical casualties, so effective triage is essential. The key element of medical management is in the differentiation between acute anxiety symptoms and poisoning from BCW agents. Psychological symptoms will range from low-grade, individual anxiety to mass panic. The best way of minimising psychological casualties is first class preparation and training. This is as true for medical staff as it is for combat troops. The next most important element in managing the psychological environment is the development and analysis of accurate information about the nature of any attack, and the rapid transmission of this information to relevant staff.

Management/treatment elements include: (1) The need for careful triage of casualties to distinguish psychological from physical problems; (2) The rapid transfer of patients with minor psychiatric symptomatology out of the triage arena with appropriate advice and self help material; and (3) The judicious use of appropriate medication when necessary and advice to commanders about the management of anxiety and panic.

Keywords: advice; anxiety; casualties; environment; injuries; management; medication; panic; poisoning; psychiatry; treatment; triage; weapons, biological and chemical
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Medical Counter-measures against Biological Warfare Agents

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A range of medical countermeasures can be used as pre- and post-exposure prophylaxis or as treatment for biological warfare agents, including vaccines, antibiotics, anti-viral agents, and generic therapies designed to enhance the immune response. Vaccines can be given routinely to provide long-term protection, but only smallpox and anthrax vaccines are available widely. The risk of receiving a live vaccine such as smallpox, has to be considered very carefully against the likely threat, and mass vaccination in the absence of an overt threat is unlikely. There is a need for new and safe vaccines against other agents, and modern plague vaccines currently are undergoing trials in the UK and the US. Other vaccines are under development,