

Doctoral Dissertation Abstracts

THE NASAL ADMINISTRATION OF BIOADHESIVE MICROSPHERES AS DRUG DELIVERY SYSTEMS

Canan OĞAN-HASÇİÇEK, Supervisor : Assoc. Prof. Nursin GÖNÜL,
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In this study, it was aimed to improve the bioadhesive microsphere formulations of gentamicin sulphate which was selected as a model drug providing its nasal absorption and administration successfully via nasal route.

The bioadhesive polymers, hydroxypropylmethyl cellulose and sodium carboxymethyl cellulose have been used in order to increase the contact duration of the formulation in nasal mucosa and to prevent the rapid removal of the substance related to the mucociliary clearance. Sodium cholate was used to increase the mucosal absorption of gentamicin sulphate. Spray drying (BÜCHI 190) method was used to prepare the microspheres. Parameters were determined by a pre-formulation study.

The morphological properties, particle size and size distribution, swelling capacities, stability and bioadhesive properties of the prepared microspheres were investigated. Drug release from microspheres was determined. The effect of drug/polymer ratio and sodium cholate on the release rate and drug-polymer interaction were also determined.

After in vitro studies, the appropriate formulations were selected and nasal absorption of gentamicin sulphate was investigated on rabbits which were chosen as model animals.

The results indicated that gentamicin sulphate, which has high polarity and insufficient rate of absorption through mucosa, showed higher nasal absorption when it was applied in the form of bioadhesive microsphere systems in combination with a penetration enhancer.

Key Words: Nasal route, gentamicin sulphate, microspheres, bioadhesion, penetration enhancers, spray drying.

IMPROVING THE ROLE OF PHARMACISTS IN DRUG ABUSE PREVENTION

Selen YEĞENOĞLU*, Supervisor : Prof. Dr. İsmail ÜSTEL, Department of Pharmacy Management, Faculty of Pharmacy, Hacettepe University, 06100, Ankara, Turkey.

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In this study the main aim is to contribute to improving the professional roles of the community pharmacists serving in Ankara in terms of substance abuse knowledge and attitudes in the light of GPP. In addition, by regarding this serious health issue from the health promotion perspective, expansion of the potential roles of pharmacists counseling activities is aimed at.

The research technique employed has been in-depth interviews with community pharmacists (a total of 60 pharmacists), a self-administered questionnaire with pharmacy students (fourth year students) (a total of 280 students) and face to face interviews (a total of 131 pharmacists) using a questionnaire.

The obtained findings indicate the following points:

* 15% of the pharmacists who took part in in-depth interviews, 40.7% of the students and 18.3% of the pharmacists interviewed through a questionnaire, stated that substance abuse is a disease which has both psychologic and physiologic characteristics.

* 83.3% of the pharmacists who took part in in-depth interviews and 77.1% of the students found teenagers, while 61.1% of the pharmacists interviewed through a questionnaire found everyone in the community at risk to substance abuse.

* The pharmacists, who had in-depth interviews, indicated that they could carry out the following roles in the prevention of substance abuse: warning the patient/consumer about the adverse reactions of medicines which have dependence risk (46.7%), not selling medicines which have a risk of abuse (43.3%) and giving priority to patient-pharmacist communication (18.3%). Students believe that community pharmacists could carry out some roles in the prevention of substance abuse such as educating people about drug abuse and participating in continuing education programmes (53.9%), providing counseling service regarding substance abuse (26.1%) and not selling medicines which have a risk of abuse without prescription (25.7%).

* Of the pharmacists who were interviewed in-depth, 71.7% assumed that teenagers/students; 26.7% assumed that children; while 30% assumed that parents must be the target group in the education of substance abuse prevention. Of the students, 86.4% believe that teenagers/students; 30.4% believe that children and 13.9% believe that everyone in the community have to be the target group in the education of substance abuse prevention.

* All of the pharmacists who are interviewed through a questionnaire have a positive attitude concerning prevention of substance abuse.

* Of the community pharmacists, %69.6; of the students, %69.9 stated that the undergraduate education concerning substance abuse in the school of pharmacy was inadequate.

* Of the pharmacists who were interviewed face to face, %75.6 stated that education is very important, %22.1 indicated that education is important. And %2.3 of the pharmacists stated that education has an avarege importance in prevention of drug abuse.

* Pharmacists should be educated in a more comprehensive way concerning drug abuse and drug abuse prevention from the beginning of their undergraduate education. Necessary changes have to be made in the legislation on Pharmacy and Pharmaceutical Services. Also, it will be useful to give support for the role of the pharmacists in this context. Some measures should be taken to convert the attitudes of pharmacists into positive action, so that good pharmacy practice (GPP) guidelines can be applied in daily life. Thus it will be possible to improve public health as well as the image of the pharmacy profession.