Conclusion: Thus, ultrasmall super magnetic nanoparticles of iron oxide (II, III) as 1.35mg of iron/kg of body weight administered parenterally in acute blood loss can inhibit lipid peroxidation in erythrocytes. Probably, the reducing of oxidative stress in the given situation is connected with fast restoration of hemoglobin level, but the mechanism of this action demands further studying.

Int	bl l	Fe	M	Fe-M
54,3+7,5	52,6+10,0	56,4+12,3	62+8,9	49,1+8,8

	ТБКАП	едЕ/мл(г)	
	Эр	*печень*	
Инт	3,15+0,88	14,05+2,33	6
	3,01+0,49		11
кр 3ч	11,21+0,97	11,82+0,97	4
кр +НЧЖ	7,15+1,35	11,7+0,61	5
кр+М	2,13+0,73	13,58+1,52	4

NEAMON-HEPA CAPSULES – PHARMACEUTICAL PRECLINICAL AND CLINICAL STUDIES

Nicolai Eugeniu, Golovin Pavel, Talpalaru Angelina, Ungureanu Alina, Rusnac Liliana, Parii Sergiu

Academic adviser: Valica V., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

Introduction: Neamon-hepa combination drug preparation, capsules, developed at the Scientific Center of Drug Research of the State University of Medicine and Pharmacy "Nicolae Testemitanu" contains the following active ingredients: arginine aspartate, spironolactone and BioR (extract of Spirulina platensis biomass), firstly proposed as a combination drug.

Matherials amd methods: Preparation of dosage of Neamon-hepa capsules: weight and volume measurement of the components, lactose impregnation with BioR, and drying of lactose with BioR and pulverization of dry mixture, preparation of mixes: I (spironolactone: anhydrous lactose in 1:2 ratio), II (mix the mix I with lactose impregnated with BioR), III (mix the mix II with cornstarch, microcrystalline cellulose, magnesium stearate), IV-final (mix the mix III with dry L-arginine aspartate), conditioning in capsules.

Results: Efficacy and safety of the product was demonstrated by clinical experiments on a group of 56 mice by determining the acute and chronic toxicity in toxic hepatitis model induced by CCl4 (carbon tetrachloride). The results indicate that in laboratory animals with induced chronic liver damage, receiving Neamon-hepa preparation, declined significantly body mass, decreased hepatomegaly, improved functional status of liver expressed by reduced total bilirubin, ALT, AST alkaline phosphatase, and serum cholesterol lactatdehydrogenase.

Neamon-hepa, has undergone clinical trials, according to the protocol on 55 patients (men and women, aged 18-61 years) with liver cirrhosis B and D of viral etiology, stage Child-Pugh A. Patients were subjected to clinical, laboratory and instrument examination. Data from this study indicates the efficacy and safety of Neamon-Hepa in the treatment of liver cirrhosis and chronic hepatitis, characterized by its hepatoprotective property, evidenced through improved liver function capacity (cytolytic index improvement) and reduction of portal hypertension.

Conclusion: Biopharmaceutical research showed a high bioavailability of active substances, which proves the adecuate selection of dosage form and correct pharmacotehnologic processes. Preclinical and clinical studies have shown that Neamon-hepa, capsules can be used in the treatment of chronic viral hepatitis and liver cirrhosis. The drug has a polyfunctional action and a spectrum of activity that is intended to provide a multidirectional therapeutic complex effect.

Key words: cirrhosis, alkaline phosphatase, lactatdehydrogenase.

CAPILLARY ELECTROPHORESIS METHOD FOR MONITORING DONEPEZIL HYDROCHORIDE IN PLASMA OF PATIENTS TREATED FOR ALZHEIMER'S DISEASE

Dima Ines

Academic advisers: Gubandru Miriana, M.D., Associate Professor; Ilie Mihaela, M.D., Researcher, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

Introduction: Donepezil is a prescription drug to treat mild, moderate, and severe stages of Alzheimer's disease. By its selective and reversible inhibition on acetylcholinesterase especially in the brain, the peripheral effects are minimal. These aspects together with its lack of hepatotoxicity represent the advantages of using donepezil towards other drugs, becoming the first line therapy for this pathology. The secundary effects involve muscarinic cholinergic symptoms (nausea, vomit, diarrhea), as well as nicotinic N_1 (insomnia) and N_2 (muscular cramps).

Aim: The paper aims to find and validate a sensitive method for the assay of donepezil in plasma using a non-aqueous capillary electrophoresis method.

Matherials and methods: Donepezil hydrochloride (PhEur.), methanol (HPLC isocratic grade), acetonitrile (HPLC grade), hexane and ammonium acetate of analytical purity were bought from Sigma, human plasma was obtained from the Haematological Institute in Bucharest. Agilent AG1610 capillary electrophoresis with diode array detector was used as main analytical instrument. Human plasma samples spiked with known amounts of donepezil were used for the bioanalytical validation of the method, which was performed according to the EMA guidelines. The method was also tested on real samples for patients treated with donepezil.

Results: The non-aqueous capillary electrophoresis method for the donepezil assay in plasma was performed using as a running buffer a mixture of methanol: acetonitrile (70:30) with 15 mM ammonium acetate, a silica PVA coated capillary (64 cm length, 50μm i.d.), 10 minutes 50 mbarr hydrodynamic injection, 30kV applied voltage; detection was performed at 315 nm (which lacks spectral interference of proteins), but the 268 and 220 nm wavelengths were also monitored. The sample were extracted with hexane from alkalinized 1:10 diluted plasma, dried under nitrogen flow, and then re-dissolved in a small amount of mobile phase. Limit of detection obtained was 0.5 μg/mL.

Conclusions: The method is sensitive and can be applied to monitor donepezil hydrochloride plasma levels in patients treated for Alzheimer's disease.

Keywords: donepezil hydrochloride, plasmatic level, non-aqueous capillary electrophoresis, therapeutic monitoring.