

# 20<sup>th</sup> European Cardiology Conference

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## Low-density lipoproteins and triglyceride removal by plasma perfusion with active charcoal at atherosclerosis and cholestatic liver disease

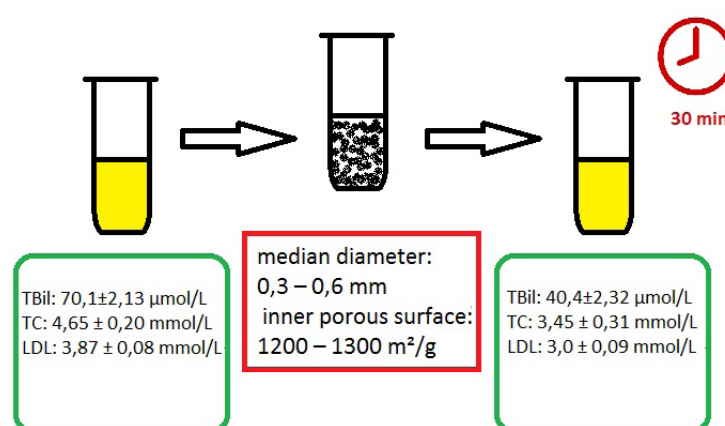
Zarina R Khaybullina, Rustam A Sadykov, Olga V Kim and Lusia M Akhmedjanova  
Republican Specialized Center of Surgery, Uzbekistan

**Statement of the Problem:** The development of artificial organs support system remains an important issue due to a high mortality rate of multi-organ dysfunction. Atherosclerosis and chronic cholestatic liver disease is common associated with hyperlipidemia, increase of low-density lipoprotein (LDL) cholesterol level. Active charcoal (AC), a highly porous material, has been widely used for endotoxins reducing through hemoperfusion. Plasma perfusion has several advantages: less loss of blood components, less activation of the coagulation system, safety. The purpose of this study is to evaluate adsorption capacity of AC for total bilirubin (TBil), total cholesterol (TC), LDL, triglyceride (TG) and its removal.

**Methodology & Theoretical Orientation:** Static adsorption experiments *in vitro* was made using AC with median diameter 0.3–0.6 mm; the inner porous surface ranged between 1200–1300 m<sup>2</sup>/g. 350 mg AC have been washed with 5 ml normal saline and then 1.0 ml of human plasma was added to AC in lab tube with diameter 1.5 cm. Adsorption lasted 30 min. Concentration of TC, LDL, TG, TBil were made before and after adsorption with AC on the automatic analyzer «VITROS-350» (USA). Statistical analysis was performed using Excel Microsoft for t-pair test. Significance was at the P<0.05 level.

**Findings:** The results of the experiment *in vitro* demonstrate high adsorption capacity of AC during static plasma adsorption. After plasma adsorption TBil decreased on 42.3%, TC – on 25.8%, LDL – on 22.48%, urea – on 49.7%, creatinine – on 71.6% (p<0.01).

**Conclusion & Significance:** Plasma perfusion using AC may be used for the treatment of cholestatic liver failure disease and decrease a risk of cardiovascular disease among these patients.



### Biography

Zarina R Khaybullina has completed her PhD and Post-doctoral studies from Biochemistry institute of Academy of Science of Republic of Uzbekistan. She is the Head of Biochemistry department at Republican Specialized Centre of surgery named after academician V. Vakhidov and Professor of Biochemistry department at Tashkent Pediatric Medical Institute. She has published more than 39 papers in reputed journals and has been serving as member of Scientific Council in Biochemistry and Biophysics. Her research field includes "Free radical biology and medicine, biochemistry of antioxidants, ultra-low concentrations of biologically active substances, biochemistry of atherosclerosis and metabolic syndrome".

zrkhaybullina1@gmail.com