

SPACE LIFE SCIENCES SYMPOSIUM (A1)  
Medical Care for Humans in Space (3)

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SOME APPROACHES TO INTRAVENOUS FLUID THERAPY IN WEIGHTLESSNESS

**Abstract**

It is known that intravenous medication is the most effective way to deliver medicine to organs and tissues. At present time on the Russian Segment of ISS small doses of intravenous medicine is possible to be given by using syringe. However, large fluid volumes can not be given in the same way as they are on Earth, although the necessity of such equipment presence under space flight conditions is evident. The aim of this work is development of the device that can provide fluid therapy in emergency under the conditions of hypo- and microgravity. The previous studies provided by NASA and IBMP specialists showed that the perspective design of such equipment can be the device on the principle of forced ousting of medicine and blood substitutes, supplied with microprocessor. The storage, transportation and injection part of the device can be based on the serial production polymeric pack for liquid therapy. The mockup of such device had been recently developed and tested in the Institute of Biomedical Problems of the Russian Academy of Sciences (Russia, Moscow). The testing showed that the device is efficient and can be used for development of flight model. To increase the operating convenience and reliability it is necessary to include into device some additional elements, namely: pressure controller in ousting camera, alarm system, indicator of infusion volume, heating system, etc. The developed system can be used for emergency in medical support of the future interplanetary flights.