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Critical care long-term management - would it be a useful experience in space medicine?

Abstract:

The treatment of 26 patients in critical condition of 30-100 days duration is analyzed. This experience might be useful in space medicine since the astronauts are similarly exposed to non-adaptable conditions.

Keywords: Long-term management, space medicine

Introduction:

Critical Condition is a particular way of life, during which the latter can only be associated with the life condition, with medical personnel assistance. Treatment and intensive care for patients who are in critical condition requires from medical personnel not only the time and expenses of physical force, but special knowledge and experience. In some cases, despite the use of modern technology, it is not possible to treat in a short period of time, and as a result a critical condition is lasting. Unfortunately, characteristics of the patients in long critical condition are poorly studied. The fact is that such cases, in pathological process affects not only emergence of the participating agents in this process, but also propagate various complications.

From this point of view, influence of diagnostic and therapeutic measures on the organism, such as x-ray and radiological tests, antibiotics, hormones, and many others, is as well important. Regulation of food and patient care processes in a way not to make these events impact pathological factors for organisms - is of a great importance.

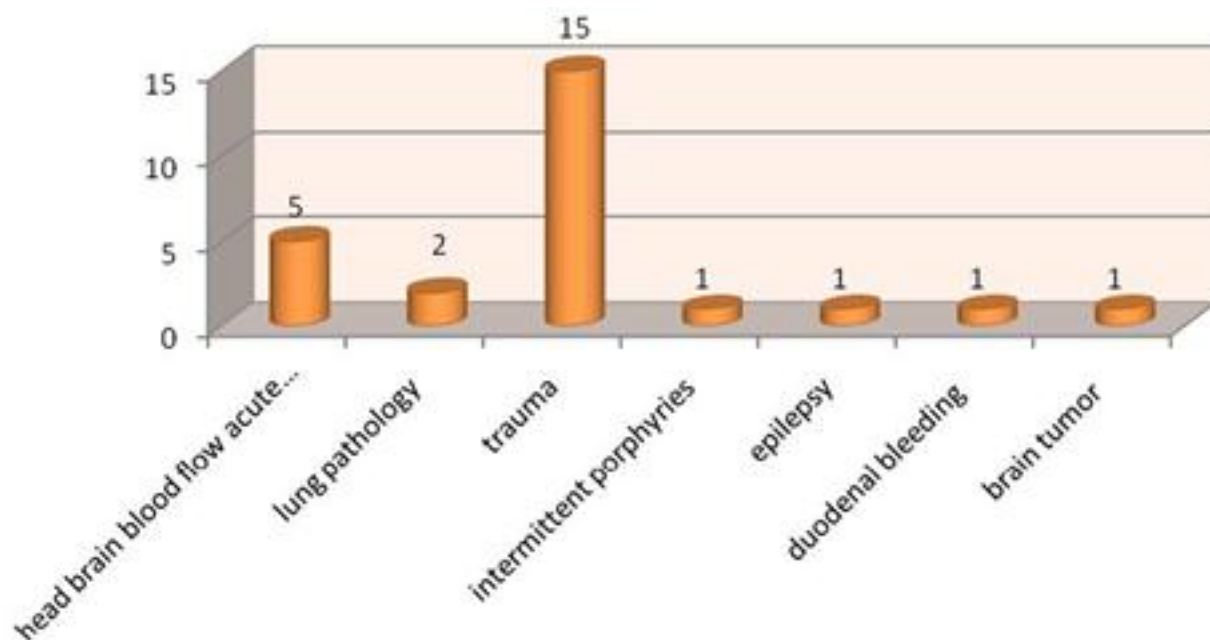
This work aims to explore peculiarities of clinical picture, treatment and care process in long-term critical state resulted due to the various reasons.

Materials and Methods:

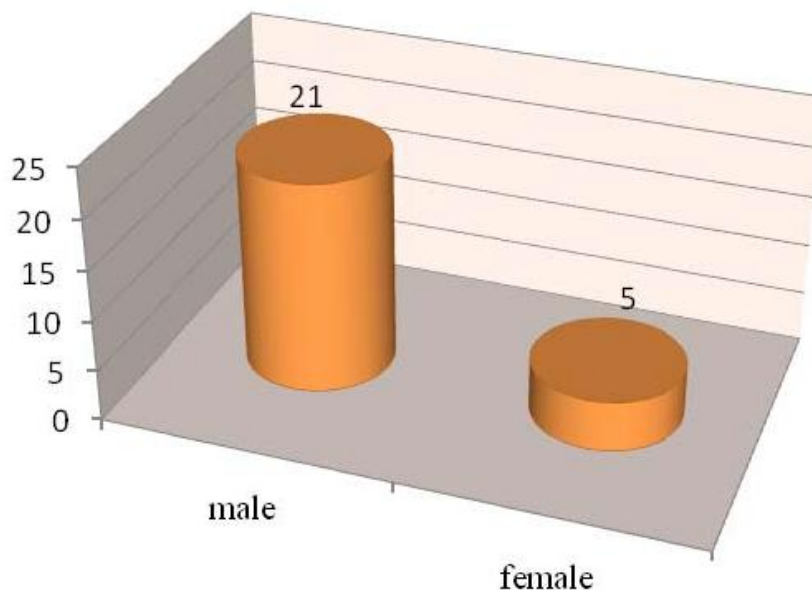
Patient group (26 patients) was studied, who were undergoing treatment for more than 30 days in critical medicine clinic, total 26 patients.

Results and discussion:

The patients were moved to the clinic for the critical condition caused by different pathologies: 15 patients had trauma, 5 patients were with head brain blood flow acute disorders, 2 ones with lung pathology, 1 with acute intermittent porphyries, 1 with epilepsy, 1 with gastro – duodenal bleeding and 1 patient was in critical condition caused by brain tumor process.



21 from patients were males and 5 of them - females.



Quality assessment of coma patients in the clinic was assessed by Glasgow coma scale. Points were no more than 8, by estimating with APACE II- the number of points was over 30 points, which was equaled to 82.2% of lethality. Patients entering the clinic needed to be transferred to controlled breathing due to acute respiratory failure. The one - the most important problem is transfer of the patient from long-term artificial ventilator to the condition of spontaneously breathing. In most cases, removing the patient from artificial ventilation is more complex to manage than artificial ventilation and its management process. It is therefore important to make proper assessment of the evidence of transferring patients to artificial breathing, and then correct management of the process.

The treatment process included a wide range of medications: Antibiotics therapy - some patients took a combination of more than one group of antibiotics, also expensive antibiotics have been used in a few cases. Infusion, electrolyte and acid - base balance correction, the treatment of cerebral edema control, antioxidant use, hormonal therapy and other pathology treatment was carried out according to the state standard (Z. Kheladze, 2001).

Feeding was a major factor in care process. All patients were fed at the initial stage with the nasal-gastro probes, considering kcal of 2500-3500, 1 g protein, 1 g fat, 4 g carbohydrate, calculated per kilogram weight.

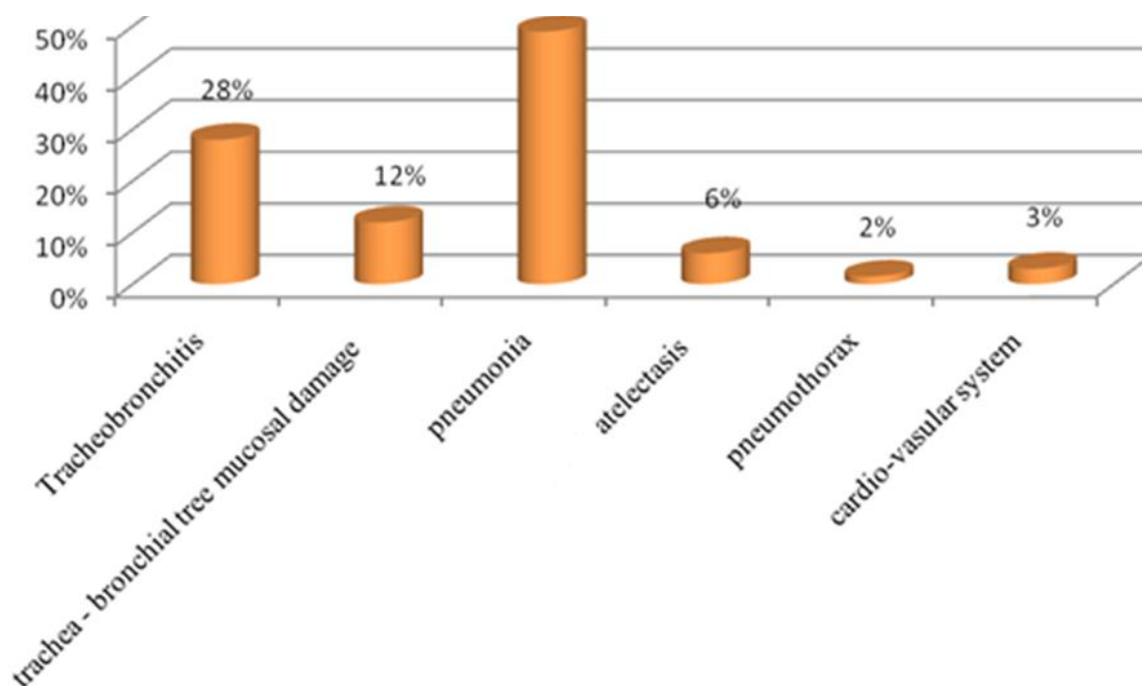
As well in the process of care, prevention of bedsores and treatment in case of discovery was important. In order to prevent there was used so-called unto bedsores mattress. As a result of their use, bedsores were observed in only 6 patients.

Majority of the patients were discharged from the hospital or transferred to departments in satisfactory condition, only 7 patients died.

As noted above, a number of complications may arise during long-term lungs ventilation, which may cause danger to the life of the patient, in addition to the basic pathology.

We mean the following types of complications, which were detected in our patients:

- Tracheobronchitis - respiratory complications - 30-40%, trachea - bronchial tree mucosal damage 12-13%, stenosis of trachea.
- Pulmonary complications from pneumonia, 36-40%, pilvis atelectasis 6%, 1-1.5% pneumothorax.
- Complications of the heart and vascular system – bleeding from blood vessels, sudden cardiac arrest, sudden drops in blood pressure.



Conclusion:

The above data indicates that many problems of long-term treatment of critical conditions require deeper study. In this regard, special attention should be paid to the study of questions of organism's adaptation, when occurring in unusual, no physiological critical condition. It is also important to know what is the impact of using the therapeutic arsenal of critical care medicine within a long term treatment on a body.

It should be pointed out that these figures will be useful for cosmic medicine, considering need of long-term space flights in the nearest future in not physiological and not adopted conditions for human beings.

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ხანგრძლივად მიმდინარე კრიტიკულ მდგომარეობათა მართვა - გამოადგება კი ეს მონაცემები კოსმოსურ მედიცინას?

შესწავლილია სხვადასხვა მიზეზით გამოწვეული ხანგრძლივი კრიტიკული მდგომარეობის კლინიკური სურათის მიმდინარეობის, მკურნალობის და მოვლის პროცესის თავისებურებანი. გამოკვლეულია 26 პაციენტი. რომელებიც მკურნალობას გადიოდნენ კრიტიკული მედიცინის ინსტიტუტში 30 დღეზე მეტი დროის განმავლობაში, კვლევის შედეგებმა უჩვენა, რომ ხანგრძლივი კრიტიკული მდგომარეობების მკურნალობის ბევრი პრობლემა უფრო ღრმა შესწავლას მოითხოვს. ამ თვალსაზრისით განსაკუთრებული ყურადღება უნდა გამახვილდეს ორგანიზმის ადაპტაციის საკიხებისადმი მისთვის უჩვეულო მდგომარეობაში მოხვედრის დროს. ასევე მნიშვნელოვანია იმის ცოდნა თუ რა ანაბეჭდს ტოვებს ორგანიზმზე ხანგრძლივი დროის განმავლობაში კრიტიკული მედიცინის არსენალში არსებული სამკურნალო - სადიაგნოზო საშუალებების გამოყენება. საგულისხმოა, რომ ამ მონაცემებმა შესაძლოა ერთგვარი გამოყენება ჰპოვოს კოსმოსურ მედიცინაში, თუ გავითვალისწინებთ რომ უახლოეს მომავალში ხანგრძლივი კოსმოსური ფრენების განხორციელება ადამიანს ასევე მისთვის უჩვეულო არაადაპტირებულ პირობებში მოუხდება.