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THE PLETHORIC ROLES OF CARVEDILOL ON STRESS, IMMUNE AND CARDIOVASCULAR SYSTEM FUNCTIONS

Abstract

This document focuses on medical care for astronauts, passengers and operators embarking on long-duration space missions to the Moon and Mars. From the medical data available to the scientific community, insurgencies of inguinal hernia, appendicitis, ureteral calculus, etc. are common to the space-travel world. Other in-flight medical events include space adaptation syndrome (SAS), nervous symptoms, neurovestibular and digestive symptoms. In other not to end like John Glenn and few others, the countermeasures include protection from exposure to acceleration/deceleration, reduced barometric pressure, microgravity and radiation (cosmic solar). Provisions must be put in place for improved cabin heating, improved air circulation and improved cooling systems also. This is just to bring the right balance between air temperature, air velocity, barometric pressure and humidity. This document also encourages plans to improve the cabin air, to reduce vibrations flight, to reduce the high-intensity noise from rocket propulsion systems, hydraulic activators, transformers, et cetera, all capable of improving stress. It also focuses on reducing the ionizing solar galactic cosmic radiations, as well as improving carbon pressure and reducing adverse effects of microgravity. The study was done using albino Wistar rats whose immunity were suppressed with Cyclosporine A. The experiment was done in two phases. While phase 1 focused on the effects of sympatho-excitation on immune system dysregulation, phase 2 experiments simply focused on the contributions of stress to immune dysregulation. The experiment simply mimics dysregulation in form of suppression of the immune system common in astronauts on long duration space missions. The results such as; decrease in corticosterone levels, improvement in hematological parameters and T-helper 1 cytokines shows boosting of weak immune functions. Thus Carvedilol is useful in decreasing stress levels and improving the cardiovascular and immune functions respectively using a plethoric mechanism of actions. Keywords: astronauts, microgravity, radiation, immune system, dysregulation, stress.