Perbandingan Profil Stres Oksidatif dan Penuaan Seluler Pra - Pasca Bedah Pintas Arteri Koroner Lansia dan Kaitannya dengan Lama Rawat di ICU = Comparison of Oxidative Stress Profile and Cellular Aging Before and After Coronary Artery Bypass Surgery in Elderly Patients and Its Relation to Length of Stay in ICU

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Abstrak

Salah satu penyakit degeneratif dengan morbiditas dan mortalitas yang tinggi pada lansia adalah penyakit jantung koroner. Bedah arteri pintas koroner merupakan intervensi bedah yang sering dilakukan untuk mengatasi arteri yang tersumbat. Radikal bebas yang terbentuk saat operasi dapat mempengaruhi hasil operasi dan berdampak terhadap lama rawat. Penelitian ini bertujuan untuk mengetahui perubahan parameter stres oksidatif dan penuaan seluler serta kaitannya dengan lama perawatan di ICU. Penelitian ini menggunakan 27 subjek lansia yang menjalani bedah arteri pintas koroner di RS. Pusat Jantung Nasional Harapan Kita. Dilakukan pengambilan sampel darah pra operasi, 24 jam pasca operasi dan 4 hari pasca operasi. Pemeriksaan kadar MDA dengan metode Will’s, TSOD dan TAOC dengan metode colorimetrik, IL-1 dan IL-18 dengan metode bead-based multiplexing, SA--Gal dengan metode Fluorometrik. Didapatkan perbedaan yang signifikan pada pengukuran MDA dan IL-18 pada pengambilan sampel 24 jam dan 4 hari pasca operasi dibandingkan dengan kadar MDA dan IL-18 pra operasi. Didapatkan korelasi negatif antara kadar TSOD pra operasi dengan lama rawat di ICU dengan r = -0,417 yang menunjukkan bahwa semakin tinggi kadar TSOD pra operasi akan semakin singkat lama perawatan di ICU.
.....One of the degenerative diseases with high morbidity and mortality rates in the elderly is coronary heart disease. Coronary artery bypass surgery is a common surgical intervention to address blocked arteries. Free radicals formed during the surgery can affect the surgical outcomes and impact the length of hospital stay. This study aims to investigate changes in oxidative stress parameters and cellular aging, and their association with the length of ICU stay. The study involved 27 elderly subjects undergoing coronary artery bypass surgery at the National Cardiovascular Center Harapan Kita. Blood samples were taken pre-operatively, 24 hours postoperatively, and 4 days postoperatively. MDA levels were measured using Will's method, TSOD, and TAOC using colorimetric methods, IL-1 and IL-18 using bead-based multiplexing, and SA--Gal using fluorometric methods. Significant differences were found in MDA and IL-18 measurements at 24 hours and 4 days post-operatively compared to pre-operative levels. A negative correlation was found between pre-operative TSOD levels and the length of ICU stay, with r = -0.417, indicating that higher pre-operative TSOD levels are associated with a shorter ICU stay.