

**EFFECT OF CORTICOSTEROID ADMINISTRATION ON  
PULMONARY CONTUSIONS, LENGTH OF STAY AND EARLY  
MORTALITY IN THORACIC TRAUMA PATIENTS  
AT DR. SARDJITO GENERAL HOSPITAL**

**ABSTRACT**

**Background:** In Indonesia, thoracic trauma is the third cause of death after head and spinal trauma. Pulmonary contusions are found in blunt thoracic trauma, and associated with increased morbidity and mortality. Direct damage to pulmonary tissue can cause an inflammatory response, both locally and systemically, resulting in acute respiratory distress syndrome (ARDS) and multiple organ failure. Pulmonary contusions can occur in the first 24 to 48 hours after trauma.

**Purpose and Objectives:** To determine effect of corticosteroid administration on the severity of pulmonary contusions, length of stay and early mortality in thoracic trauma patients at dr. Sardjito General Hospital.

**Methods:** This study was observational with a cross sectional design and conducted at dr. Sardjito General Hospital Yogyakarta. Data was taken from medical records. The study population was patients with pulmonary contusion after thoracic trauma at dr. Sardjito General Hospital from January 2019 to November 2023 who met the inclusion and exclusion criteria. Data analysis using Chi-square test and using IBM SPSS Statistics 24 for Windows. Significant value in this study if the variables analyzed have  $p < 0.05$ .

**Results:** The differences in effect of corticosteroid on the severity of pulmonary contusions, length of stay and early mortality respectively obtained values of  $p = 0.937$ ,  $p = 0.214$ , and  $p = 0.317$ . There was no difference in the influence of the variables age, gender, type of complication, trauma mechanism, type of trauma, side of pulmonary contusion, type of rib fracture, type of thoracic trauma with severity of pulmonary contusions, length of stay and early mortality. The time of surgery has a significant influence on the length of stay ( $p = 0.003$ ) with odds ratio = 72.9.

**Conclusion:** There was no difference in effect of corticosteroid on the severity of pulmonary contusions, length of stay, and early mortality, and there was an effect on the time of patient surgery on the length of stay in thoracic trauma patients at dr. Sardjito General Hospital.

**Keywords:** corticosteroids, early mortality, length of stay, pulmonary contusion

## INTISARI

**Latar Belakang:** Di Indonesia, trauma toraks merupakan penyebab ketiga kematian setelah trauma kepala dan tulang belakang. Kontusio pulmo ditemukan pada trauma tumpul toraks, dan berhubungan dengan peningkatan morbiditas serta mortalitas. Kerusakan langsung pada jaringan pulmo dapat menyebabkan respon inflamasi, baik secara lokal maupun sistemik, mengakibatkan terjadinya sindrom gangguan pernapasan akut/*acute respiratory distress syndrome* (ARDS) dan kegagalan organ multipel. Kontusio pulmo dapat terjadi dalam 24 hingga 48 jam pertama pasca trauma.

**Tujuan:** Mengetahui perbedaan pengaruh pemberian kortikosteroid terhadap keparahan kontusio pulmo, lama rawat inap dan mortalitas dini pada pasien trauma toraks di RSUP dr. Sardjito.

**Metode:** Penelitian ini bersifat observasional dengan desain *cross sectional* dan dilakukan di Rumah Sakit Umum Pusat dr. Sardjito Yogyakarta. Data diambil dari rekam medis. Populasi penelitian adalah pasien kontusio pulmo pasca trauma toraks di RSUP Dr. Sardjito Yogyakarta pada Januari 2019 sampai dengan November 2023 yang memenuhi kriteria inklusi dan eksklusi. Analisis data dengan uji *Chi-square* dan menggunakan *IBM SPSS Statistics 24 for Windows*. Nilai signifikan dalam penelitian ini apabila variabel yang dianalisis memiliki  $p < 0,05$ .

**Hasil:** Perbedaan pengaruh pemberian kortikosteroid terhadap kontusio pulmo, lama rawat inap dan mortalitas dini berturut-turut mendapatkan nilai  $p = 0,937$ ,  $p = 0,214$ , dan  $p = 0,317$ . Tidak ada perbedaan pengaruh variabel usia, jenis kelamin, jenis komplikasi, mekanisme trauma, jenis trauma, sisi kontusio pulmo, jenis fraktur kosta, jenis trauma toraks terhadap keparahan kontusio pulmo, lama rawat inap dan mortalitas dini. Waktu tindakan operasi pasien memiliki pengaruh signifikan terhadap lama rawat inap ( $p = 0,003$ ) dengan *odd ratio* = 72,9.

**Simpulan:** Tidak ada perbedaan pengaruh pemberian kortikosteroid terhadap keparahan kontusio pulmo, lama rawat inap, dan mortalitas dini, serta ada pengaruh waktu tindakan operasi pasien terhadap lama rawat inap pada pasien trauma toraks di RSUP dr. Sardjito.

**Kata Kunci:** kontusio pulmo, kortikosteroid, lama rawat inap, mortalitas dini