

ABSTRAK

Analisis Histopatologis Medula Spinal Cervicalis Akibat Pejanan Listrik Selama 15 Detik

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Listrik merupakan sumber energi utama yang sangat penting bagi kehidupan manusia. Namun, listrik berpotensi menyebabkan kecelakaan yang berakibat fatal apabila terjadi kontak langsung dengan arus listrik. Pada beberapa penelitian diketahui kecelakaan akibat sengatan listrik tidak selalu menunjukkan fenomena spesifik sehingga perlu dilakukan penelitian mengenai analisis histopatologis terkait pejanan listrik pada tikus. Penelitian ini bertujuan untuk mengetahui perubahan gambaran histopatologis medula spinal cervicalis tikus setelah diberi pejanan listrik selama 15 detik.

Penelitian ini menggunakan 6 ekor tikus *Sprague Dawley* yang terdiri dari kelompok kontrol dan kelompok perlakuan. Kelompok kontrol terdiri 3 ekor tikus yang hanya diberikan pakan dan minum. Kelompok perlakuan terdiri dari 3 ekor tikus yang diberi sengatan listrik sebesar 0,05 A, 220 v, 12 watt, 50 Hz selama 15 detik. Tikus *Sprague Dawley* dieuthanasi lalu diambil sampel jaringan medula spinalis. Medulla spinalis direndam di dalam larutan PBS Formalin 10% kemudian dipotong dengan ketebalan 4 μ m lalu diwarnai pewarnaan *hematoxylin-eosin*. Preparat diamati dengan menggunakan mikroskop cahaya dan dianalisis secara deskriptif.

Hasil penelitian menunjukkan adanya perubahan histopatologis medula spinalis cervicalis tikus yang dipejan listrik berupa nekrosis neuron, kongesti, edema, dan kavitasi.

Kata kunci: listrik, medula spinalis, nekrosis neuron, kongesti, edema, kavitasi

ABSTRACT

HISTOPATHOLOGICAL ANALYSIS OF CERVICAL SPINAL MEDULLA DUE TO ELECTRICAL EXPOSURE FOR 15 SECONDS

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Electricity is the main source of energy which is very important for human life. However, electricity has the potential to cause fatal accidents if there is direct contact with an electric current. In several studies, it is known that accidents caused by electric shock do not always show specific phenomena, so it is necessary to conduct research on histopathological analysis related to electrical exposure in rats. This study aims to determine changes in the histopathological appearance of the cervical spinal cord in rats after being exposed to electricity for 15 seconds.

This study used 6 *Sprague Dawley* rats consisting of a control group and a treatment group. The control group consisted of 3 rats which were only given food and drink. The treatment group consisted of 3 rats that were given an electric shock of 0.05 A, 220 v, 12 watts, 50 Hz for 15 seconds. *Sprague Dawley* rats were euthanized and spinal cord tissue samples were taken. The spinal cord was immersed in 10% PBS formalin solution, then cut with a thickness of 4 µm and stained with haematoxylin-eosin. The preparations were observed using a light microscope and analyzed descriptively.

The results showed that there were histopathological changes in the cervical spinal cord of rats exposed to electricity in the form of neuronal necrosis, congestion, edema, and cavitation.

Keywords: electricity, spinal cord, neuronal necrosis, congestion, edema, cavitation