

GAMBARAN HISTOPATOLOGI SEL SARAF TIKUS WISTAR (*Rattus norvegicus*) LIKE MODEL ALZHEIMER PADA DAERAH KORTEKS SEREBRI AKIBAT INDUKSI ALUMINIUM KLORIDA



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ABSTRACT

HISTOPATHOLOGY OF NERVE CELLS OF WISTAR RATS (*Rattus norvegicus*) LIKE MODEL OF ALZHEIMER'S IN THE CEREBRAL CORTEX REGION DUE TO INDUCTION OF ALUMINUM CHLORIDE

By

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*Alzheimer's is a degenerative disease that attacks brain nerve cells. Aluminum chloride is thought to trigger the occurrence of Alzheimer's. Aluminum can induce APP gene expression and can cause A β plaque aggregation, thereby causing nerve cell damage. The damage that occurs is not only in the hippocampus, it can also be in the cerebral cortex. This study aims to determine the histopathological picture of nerve cells in wistar rats (*Rattus norvegicus*) like the Alzheimer's model in the cerebral cortex region due to the induction of aluminum chloride.*

This type of research is quantitative descriptive research with the design of the post only control group design. The study was conducted at the Anatomical Pathology Laboratory of the Faculty of Medicine of Andalas University from May 2022 to November 2022. The study sample was 14 preparations with each group of 7 preparations. Counting nerve cells with the Image J app and calculating the percentage of damaged nerve cells.

The results showed that nerve cells experienced apoptosis and necrosis in mice given aluminum chloride. The average percentage of nerve cell damage in the control group and aluminum chloride group was 4.82% and 15.88%.

Based on the results of the study, it can be concluded that the histopathological picture of the nerve cells of the brain of wistar rats in the area of the cerebral cortex induced by aluminum chloride contains nerve cells that experience apoptosis and necrosis. The percentage of nerve cell damage was higher in aluminum chloride-induced mice than in mice that were not aluminum chloride-induced.

Keyword: Nerve cells, alzheimer's, aluminum chloride, cerebral cortex, a β plaques.

ABSTRAK

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Alzheimer merupakan salah satu penyakit degeneratif yang menyerang sel saraf otak. Aluminium klorida diduga dapat memicu terjadinya alzheimer. Aluminium dapat menginduksi ekspresi gen APP dan dapat menyebabkan agregasi plak A β , sehingga menyebabkan kerusakan sel saraf. Kerusakan yang terjadi tidak hanya di hipokampus, tetapi bisa juga di korteks serebri. Penelitian ini bertujuan untuk mengetahui gambaran histopatologi sel saraf tikus wistar (*Rattus norvegicus*) like model alzheimer pada daerah korteks serebri akibat induksi aluminium klorida.

Jenis penelitian ini merupakan penelitian deskriptif dengan desain *the post only control group design*. Penelitian dilakukan di Laboratorium Patologi Anatomi Fakultas Kedokteran Universitas Andalas dari bulan Mei 2022 hingga November 2022. Sampel penelitian 14 preparat dengan masing-masing kelompok 7 preparat. Penghitungan sel saraf dengan aplikasi *Image J* dan dihitung persentase sel saraf yang rusak.

Hasil penelitian menunjukkan sel saraf mengalami apoptosis dan nekrosis pada tikus yang diberikan aluminium klorida. Rerata persentase kerusakan sel saraf pada grup kontrol dan grup aluminium klorida adalah 4,82% dan 15,88%.

Berdasarkan hasil penelitian dapat disimpulkan bahwa gambaran histopatologi sel saraf otak tikus wistar pada daerah korteks serebri yang diinduksi aluminium klorida terdapat sel saraf yang mengalami apoptosis dan nekrosis. Persentase kerusakan sel saraf lebih tinggi pada tikus yang diinduksi aluminium klorida daripada tikus yang tidak diinduksi aluminium klorida.

Kata Kunci: Sel saraf, Alzheimer, aluminium klorida, korteks serebri, plak a β .