

**“GAMBARAN HISTOPATOLOGI JARINGAN PARU TIKUS (*Rattus norvegicus*)
PADA BEBERAPA KEADAAN TENGGELAM DI AIR TAWAR”**

ABSTRAK

Latar Belakang: Tenggelam masih menjadi salah satu penyebab kematian yang signifikan dengan patofisiologi yang kompleks dan sulit didiagnosis. Pemeriksaan histopatologi jaringan paru adalah salah satu pemeriksaan yang dapat menunjang diagnosis *cause of death* dan *manner of death* pada kasus tenggelam.

Tujuan: Mengetahui gambaran histopatologi jaringan paru tikus yang tenggelam di air tawar dalam beberapa keadaan: hidup, tidak sadar dan mati.

Metode: Penelitian deskriptif eksperimental dengan membagi tikus dalam tiga kondisi, tenggelam dalam keadaan hidup, tidak sadar dan mati (*post-mortem*). Tikus ditenggelamkan lalu jaringan paru diambil, diproses, diwarnai dengan pewarna hematoksilin eosin lalu diamati gambaran histopatologinya di bawah mikroskop. Hasil pembacaan preparat disajikan dalam bentuk deskriptif dan skoring.

Hasil: Pada kelompok 1 ditemukan gambaran edema alveoli dengan skor 2, perdarahan skor 4, infiltrasi sel radang skor 2,2 dan penebalan alveoli skor 2,4, pada kelompok 2 ditemukan skor edema alveoli 2, skor perdarahan 4, skor infiltrasi sel radang 2,2 dan penebalan alveoli 2,4 sedangkan kelompok 3 ditemukan skor gambaran edema alveoli 1, skor perdarahan 4, skor infiltrasi sel radang 4 dan skor penebalan alveoli 3.

Kesimpulan: Histopatologi jaringan paru tikus yang tenggelam dalam keadaan hidup tampak edema alveoli sedang, perdarahan masif, infiltrasi sel radang sedang dan penebalan alveoli sedang. Tikus yang tenggelam tidak sadar tampak edema alveoli sedang, perdarahan masif, infiltrasi sel radang sedang dan penebalan alveoli sedang. Tikus yang tenggelam setelah mati tampak edema alveoli minimal, perdarahan masif, infiltrasi sel radang massif dan penebalan alveoli berat.

Kata Kunci: Air Tawar, Histopatologi Jaringan Paru, Tenggelam

**“HISTOPATHOLOGY OF RAT (*Rattus norvegicus*) LUNGS IN SEVERAL
DROWNING CONDITION IN FRESH WATER”**

ABSTRACT

Background: Drowning remains a significant cause of mortality, with complex pathophysiological mechanisms that are often challenging to diagnose. Histopathological examination of the lung is one of the tests that supports the diagnosis of the cause of death and manner of death in drowning cases.

Objective: This study aims to characterize the histopathological features of rat lung tissues subjected to freshwater drowning in different states: alive, unconscious and deceased.

Methods: A descriptive experimental study by dividing the rats into three conditions, alive, unconscious and deceased during drowning (post-mortem). The lung tissues collected from the drowned rats, processed, colored with hematoxylin eosin stains and observed under the microscope. The results stated in descriptive form and scores.

Results: In group 1, there was a picture of alveolar edema with a score of 2, bleeding with a score of 4, inflammatory cell infiltration with a score of 2.2 and alveolar thickening with a score of 2.4, in group 2, there was a score of alveolar edema with a score of 2, bleeding with a score of 4, inflammatory cell infiltration with a score of 2.2 and alveolar thickening with a score of 2.4, while in group 3, there was a picture of alveolar edema with a score of 1, bleeding with a score of 4, inflammatory cell infiltration with a score of 4 and alveolar thickening with a score of 3.

Conclusion: Histopathology of lung tissue of rats that drowned alive showed moderate alveolar edema, massive hemorrhage, moderate inflammatory cell infiltration and moderate alveolar thickening. Rats that drowned unconsciously showed moderate alveolar edema, massive hemorrhage, moderate inflammatory cell infiltration and moderate alveolar thickening. Rats that drowned after death showed minimal alveolar edema, massive hemorrhage, massive inflammatory cell infiltration and severe alveolar thickening.

Keywords: Drowning, Freshwater, Lung Histopathology