

Perbandingan proses dekomposisi berbagai organ mencit yang diawetkan dengan formalin tanpa netralisasi dan dengan netralisasi menggunakan amonium karbonat = The comparison of decomposition process between various formalin preserved mice organs without netralization and with netralization using ammonium carbonate

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Abstrak

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Jenazah untuk pendidikan anatomi kedokteran (kadaver) umumnya diawetkan dengan formalin untuk mencegah proses pembusukan selama rentang waktu penggunaannya. Namun, karena formalin merupakan pengawet yang poten, tanpa netralisasi, setelah dikebumikan, kadaver akan sulit diuraikan sehingga berpotensi menjadi polutan. Larutan amonium karbonat telah diketahui dapat menetralkan larutan formalin, tetapi belum pernah dilaporkan apakah amonium karbonat dapat digunakan untuk menetralkan formalin dalam tubuh kadaver sehingga jasad dapat mengalami dekomposisi sempurna. Oleh karena itu, dilakukan percobaan dengan hewan coba mencit (*Mus musculus*) untuk mengetahui apakah berbagai organ mencit berformalin dapat dinetralkan dengan amonium karbonat dan mengalami dekomposisi setara dengan organ-organ mencit tanpa formalin. Pada penelitian eksperimental ini mencit (n=18) dibagi menjadi tiga kelompok, yaitu tidak diawetkan (tanpa formalin; n=6), diawetkan dengan formalin (konsentrasi awal 10%, konsentrasi lanjut 4%; n=6), dan diawetkan formalin lalu dinetralkan dengan amonium karbonat (konsentrasi 25%; n=6). Agar menyerupai proses pemakaman pada manusia, sebelum dikebumikan mencit beserta organnya dimandikan dengan air dan dibungkus kain kafan. Pengamatan proses dekomposisi, yaitu skor tahapan dekomposisi dan persentase penurunan berat organ (usus, hati, otot, jantung, paru, dan otak) dilakukan setiap minggu. Dari total enam minggu pengamatan, diketahui bahwa skor tahapan dekomposisi dan persentase penurunan berat organ-organ mencit kelompok amonium karbonat lebih besar dari kelompok formalin, tetapi lebih kecil dari kelompok tanpa formalin. Disimpulkan bahwa penetralan berbagai organ mencit berformalin dengan 25% amonium karbonat mampu meningkatkan proses dekomposisi organ-organ tersebut, walaupun belum setara dengan jasad mencit tanpa formalin (tanpa diawetkan).

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**ABSTRACT**

Corpse for medical anatomy education (cadaver) is generally preserved by formalin to prevent the decay process during the period of its use. However, because formalin is a potent preservative, without neutralization, after being buried, cadavers will be difficult to decompose and potentially become pollutants. Ammonium carbonate solutions have been known to neutralize formalin solutions, but it has never been reported whether ammonium carbonate can be used to neutralize formalin in cadaveric bodies so that the body can experience perfect decomposition. Therefore, experiments with mice (*Mus musculus*) were conducted to determine whether the organ of formalin mice can be neutralized with ammonium carbonate and experience decomposition equivalent to the organs of mice without formalin. In this experimental study mice (n = 18) were divided into three groups, namely not preserved (without formalin n = 6), preserved with formalin (initial concentration 10%, following concentration 4%; n = 6), and preserved formalin then

neutralized with ammonium carbonate (25% concentration; n = 6). In order to resemble the process of funeral in humans, before being buried mice with their organs are bathed with water and wrapped in kafan cloth. Observation of the decomposition process, which is decomposition stage score and weight loss percentage of organs (intestine, liver, muscle, heart, lung, and brain) is carried out every week. From a total of six weeks of observation, it was found that the decomposition stage scores and the weight loss percentage of the ammonium carbonate group were greater than the formalin group, but smaller than the formalin-free group. It was concluded that neutralizing the organs of formalin mice with 25% ammonium carbonate was able to improve the decomposition process of those organs, although not equivalent to the organs of mice without formalin (without preserving).