

ABSTRACT**The Effect of Moderate Intensity of Physical Exercise in the Elevation of Bax/Bcl-2 Ratio on Oral Squamous Epithelial Cell Induced by Benzopyrene**

Pengaruh Latihan Fisik Intensitas Sedang terhadap Peningkatan Rasio Bax/Bcl-2 pada Sel Epitel Skuamosa Rongga Mulut yang Diinduksi Benzopyrene

Background: The prevalence of oral squamous carcinoma are nowadays getting higher because the intake of tobacco (cigarette) as the predisposition factor of oral squamous carcinoma increased. Benzopyrene is one of the carcinogenic substances cigarette contained. Physical exercise has many positive influences, such as increasing heart activity and increasing lung capacity, but the study of how physical exercise preventing cancer still remain a little. So we decided to study its effect on preventing cancer, especially on how its effect to Bax/Bcl-2 ratio. **Methods:** Mus musculus strain Swiss Webster (Balb/c) being acclimated for one week, then divide them by three groups. *Measure their weight to decide the load (3% of mice's weight). Determine the maximum capacity of mice's swimming. The method that being used is 70% of the maximum capacity.* K1 and K2 only contacted by water for 12 weeks. K3 swim through the water for 12 weeks added by the load. All groups has a swimming frequency of 3 times a week. K1 induced by oleum olivarum 0,04 ml. K2 induced by benzopyrene 0,08 mg/oleum olivarum 0,04 ml. K3 induced by 0,08 mg/oleum olivarum 0,04 ml added by the load. The induction occurs from 5th week till 8th week. After the immunohistochemical examination, analyze the expression of Bax/Bcl-2 ratio. **Result:** The Bax/Bcl-2 ratio increased significantly between K2 to K3 with value of $p < 0.05$ with independent t-test. **Conclusion:** Moderate intensity physical exercise could affect the increasing of Bax/Bcl-2 ratio.

Keywords: moderate intensity of physical exercise, benzopyrene, oral squamous carcinoma, Bax/Bcl-2 ratio