

INTISARI

Burkitt's lymphoma (BL) merupakan salah satu permasalahan kesehatan dunia termasuk di Indonesia. Burkitt's lymphoma adalah salah satu jenis keganasan dengan prevalensi 3,37% di dunia dan terus meningkat. Penatalaksanaan BL dengan obat kemoterapi berdampak pada timbulnya efek samping, sehingga dibutuhkan penatalaksanaan yang lebih aman dan tidak toxic, salah satunya menggunakan meloxicam yang memiliki kelebihan sebagai *selective inhibitor COX-2*. Ekspresi *COX-2* yang berlebihan diketahui terlibat dalam beberapa mekanisme kanker seperti pemicu pertumbuhan sel, angiogenesis, promotor invasi dan metastasis dan menghambat apoptosis. Penelitian ini bertujuan untuk menganalisis pengaruh pemberian meloxicam sebagai *selective inhibitor COX-2* terhadap perubahan morfologi dan apoptosis sel Burkitt's lymphoma.

Jenis penelitian yang digunakan adalah eksperimental laboratoris dengan rancangan *post test only control group design*. Sel Burkitt's lymphoma (sel Raji) berasal dari ATCC-CCL-86-lymphocyte (USA) yang diberi paparan meloxicam dengan dosis 100 μ M dan 200 μ M selama 24 jam. Pengamatan perubahan morfologi sel dengan mikroskop fase kontras dan SEM serta induksi apoptosis dilakukan menggunakan TUNEL assay dengan metode *flow cytometry*.

Hasil penelitian menunjukkan sel kelompok penelitian yang diberi meloxicam selama 24 jam dosis 100 μ M dan 200 μ M mengalami perubahan morfologi berupa membran *blebbing*. Meloxicam secara signifikan ($p < 0,05$) dapat menginduksi apoptosis sel Burkitt's lymphoma berdasarkan uji *One way Anova*. Kesimpulan pada penelitian ini meloxicam dapat menyebabkan perubahan morfologi dan menginduksi apoptosis sel Burkitt's lymphoma.

Kata kunci: perubahan morfologi, induksi apoptosis, meloxicam, sel Burkitt's lymphoma

ABSTRACT

Burkitt's lymphoma (BL) is one of the world's health problems, including in Indonesia. Burkitt's lymphoma is a type of malignancy with a prevalence of 3.37% in the world and continues to increase. The management of BL with chemotherapy drugs has an impact on the occurrence of side effects, so a safer and less toxic treatment is needed, one of which is using meloxicam which has the advantage of being a selective COX-2 inhibitor. Overexpression of COX-2 is known to be involved in several cancer mechanisms such as cell growth trigger, angiogenesis, invasion and metastasis promoter, and inhibition of apoptosis. The study aimed to analyze the effect of meloxicam as a selective COX-2 inhibitor on morphological changes and apoptosis of Burkitt's lymphoma cells.

A laboratory experimental with a post test only control group design was confirmed in this study. Burkitt's lymphoma cells (Raji cell) derived from ATCC-CCL-86-lymphocyte (USA) were exposed to meloxicam at a dose of 100 μ M and 200 μ M for 24 hours. Observation of changes in cell morphology was conducted using phase contrast microscopy, and apoptosis induction was carried out using TUNEL assay with flow cytometry method.

The results revealed that the cells were given meloxicam for 24 hours at a dose of 100 μ M and 200 μ M experienced morphological changes in the form of membrane blebbing. Meloxicam has significantly induced apoptosis of Burkitt's lymphoma cells based on the One way Anova test ($p < 0.05$). In conclusion, meloxicam can cause morphological changes and induce apoptosis of Burkitt's lymphoma cells.

Keywords: *morphological changes, induction of apoptosis, meloxicam, Burkitt's lymphoma cells.*