

Effects of *Carica pubescens* leaf extract on haematological profile and histopathological appearance of azoxymethane-induced colon cancer rats

by Muflihatul Muniroh

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Ainun R. Gumay^{1*}, Saekhol Bakri¹, Eka M. Sugeng¹, Maharani S. Yudina¹, Faradilla N. Bleizensky¹, Muflihatul Muniroh¹, Yosef Purwoko¹ and Hardian Hardian¹

¹ Diponegoro University, Indonesia

ABSTRACT

Background

Neuroinflammatory and apoptosis mechanisms play an important role in the pathogenesis of colorectal cancer. *Carica pubescens* (CP) has potential anti-inflammatory, antioxidant and anticancer effects. This study aims to determine the effect of CP leaf extract on haematological profile and histopathological appearance of azoxymethane (AOM)-induced colon cancer rats.

Methods

Sprague Dawley rats (25 male, aged 5-7 weeks) were divided into 5 groups. The AOM groups were induced intraperitoneally by injection of AOM (10 mg/kgBW) once per week for 2 weeks. CP-100, CP-200, and CP-400 groups were induced by AOM and orally administered with 100, 200, and 400 mg/kgBW CP leaf extract once daily for 2 weeks. The normal control (NC) group was given saline. The haematological profile that was examined includes white blood cell (WBC), lymphocyte, and neutrophil count. The histopathological appearance shows the number of inflammatory cells (macrophages, lymphocytes, histiocyte, and polymorphonuclear cells). One-way Anova and post hoc LSD were used for statistical analysis.

Results

The WBC count of CP-100 ($4380 \pm 715.5/\mu\text{L}$) was significantly lower than AOM ($7000 \pm 2065.2/\mu\text{L}$; $p=0.002$). The lymphocyte count of CP-100 ($3260 \pm 746.9/\mu\text{L}$) was also significantly lower than AOM ($5460 \pm 1647.1/\mu\text{L}$; $p=0.001$). The neutrophil counts in CP-100 ($940 \pm 554.9/\mu\text{L}$; $p=0.005$), CP-200 ($1220 \pm 342.1/\mu\text{L}$; $p=0.001$), and CP-400 ($1240 \pm 680.4/\mu\text{L}$; $p=0.008$) were significantly lower than the AOM group ($2040 \pm 270.2/\mu\text{L}$). The mean of inflammatory cells in histopathological appearance of AOM group (1008.6 ± 21.45 cells) was significantly higher than N-C group (412.6 ± 14.42 cells), CP-100 (843.4 ± 13.72 cells), CP-200 (701.2 ± 25.41 cells), and CP-400 (642.0 ± 30.00 cells) with $p < 0.001$.

Conclusion

Carica pubescens leaf extract seem to reduce the number of inflammatory cells, WBC, lymphocytes, and neutrophil counts in azoxymethane-induced colon cancer rats.

Figure 1

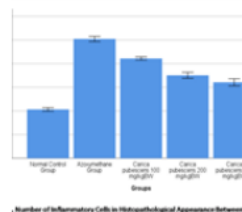
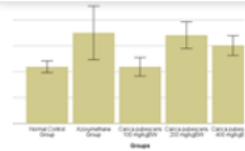


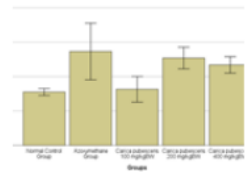
Figure 2

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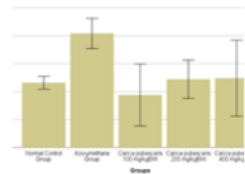
■1. Comparison of White Blood Cells Count (cells/μL) Between Gr

Figure 3



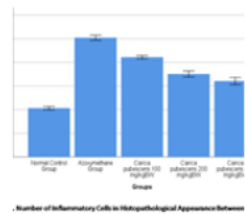
■2. Comparison of Lymphocyte Count (cells/μL) Between Gr

Figure 4



■3. Comparison of Neutrophil Count (cells/μL) Between Gr

Figure 5



Number of Inflammatory Cells in Histopathological Appearance Between

Acknowledgements

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* **Correspondence:** Mrs. Ainun R Gumay, Diponegoro University, Semarang, Indonesia, ainungumay@fk.undip.ac.id

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