Abstract P11

Is There a Relationship Between Damage-Associated Molecular Patterns (DAMPs) And Colorectal Cancer?

Elsa Haniffah Mejia Mohamed[1], Cheng Kim Jun[1], Suha Azizan[1], Xue Jing Jong[1], Khong Tak Loon[2], Toh Yeh Fa[3], Bunita Kumari Hari Chand[3], Zaridatul Aini Ibrahim[1]

Objectives: Interleukin 1 α (IL-1α) and High Mobility Group Box 1 (HMGB1) are damage-associated molecular patterns (DAMPs), which have been associated with cancer progression by promoting proliferation, angiogenesis, invasion, and metastasis. This study aimed to determine the expression of IL-1α and HMGB1 in CRC tumours compared to their normal tissue adjacent to tumour (NAT) in CRC patients and their relationship with clinicopathological features.

Methods: Ethics approval was obtained from Medical Research Ethics Committee University of Malaya Medical Centre (UMMC). 40 adult patients who underwent CRC tumour resection were recruited. Important clinical information was noted from the patient's medical records. DAMPs expression levels in tumour and NAT samples were determined based on the percentage of area stained using immunohistochemistry (IHC). Images were analysed using Image J software and subjected to statistical analysis testing for comparison and correlations.

Results: 20 male and 20 female patients were recruited with a mean age of 67.93 ± 1.697 years. Patients presented with stage I, 11, III and IV were 11 (27.5%), 11 (27.5%), 16 (40%) and 2 (5%) respectively. Stage IV subjects were excluded from analysis due to low numbers. IL-1α and HMGB1 were significantly higher in tumour samples when compared to NAT, with IL-1α in tumour 17.29% ± 1.685% and 8.326% ± 0.994% in NAT ($p < 0.0001$), and HMGB1 expressions being 0.04% ± 2.383% in tumour and 22.95% ± 1.848% in NAT ($p = 0.0213$). A significant difference and positive correlation were observed in the levels of HMGB1 with disease staging ($p = 0.0461$, $r = 0.344$). No significant correlations were found with other clinicopathological features.

Conclusion: Higher levels of DAMPS in tumour tissues and higher levels of HMGB1are correlated with more advanced disease staging could serve as potential diagnostic and prognostic markers for CRC. This work was supported by UMSC Care Grant PV017-2020.

Keywords: DAMPs, IL-1α, HMGB1, colorectal cancer, immunohistochemistry

1. Department of Pharmacology, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia
2. Department of Surgery, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia
3. Department of Pathology, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

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Correspondence to:
Dr. Elsa Haniffah Mejia Mohamed, Medical Lecturer, Department of Pharmacology, Faculty of Medicine, Universiti Malaya, 50603 Kuala Lumpur, Malaysia. Email: elsa@um.edu.my