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Evaluation of wound healing biomarkers of Interleukin 6 (IL-6), Vascular Endothelial Growth Factor (VEGF) and Matrix Metalloproteinases 9 (MMP-9) in post Lower Segment Caesarean Section (LSCS) patients consuming Channa Striatus extract

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Abstract

Background: Wound healing is a dynamic process which is divided into four phases; haemostasis, inflammatory, proliferation and tissue remodelling phases, that encompasses inflammatory cells, cytokines and growth factors. Interleukin-6 (IL-6). Vascular Endothelial Growth Factor (VEGF) and Matrix Metalloproteinase 9 (MMP-9) involve at the different phases of wound healing. Channa striatus (C.striatus) is a fresh water fish that is believed to have natural properties to promote wound healing. Currently, the effects of C.striatus on the cytokines and growth factors are not available. Objective: This study was conducted to evaluate the wound healing biomarkers; IL-6, VEGF and MMP-9 on post Lower Segment Caesarean Section (LSCS) women consuming oral C.striatus extract. Methods: This was a randomised, double-blinded study amongst LSCS women consuming C.striatus extract versus a placebo at Universiti Sains Malaysia Hospital and Raja Perempuan Zainab II Hospital from May 2011 to January 2013. After randomization, the treatment group received freeze dried C.striatus extract 500 mg daily while the placebo group received maltodextrin 500 mg daily for 6 weeks. Blood samples for IL-6, VEGF and MMP-9 were taken from both groups post-operatively at day 3, week 2, week 4 and week 6. The data were analysed using SPSS version 22. Results: A total of 39 patients from C.striatus and 34 patients from placebo group were included in this study. Within C.striatus group, the results of IL-6, MMP-9 and VEGF showed significant differences (P<0.05) for all the study period. Between group comparison showed significant difference (P<0.05) on week 4 and week 6 for IL-6 and MMP-9 whereas VEGF showed significant difference (P<0.05) on day 1, day 3, week 4 and week 6. The trend of IL-6 and MMP-9 exhibit decreasing trend in both groups however, VEGF in C.striatus group exhibit increasing trend till week 6 compared to placebo group. Conclusion: This study showed C.striatus extract had effects on IL-6, VEGF and MMP-9 in post LSCS women.

Keywords

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