INTERRELATIONSHIP BETWEEN NICOTINIC ACETYLCHOLINE RECEPTOR AND CYTOKINE PRODUCTION NOTED FOLLOWING T-CELL ANTIGEN RECOGNITION AND ACTIVATION

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Background: T cells express muscarinic and nicotinic acetylcholine receptors (mAChRs, nAChRs) that increase intracellular Ca²⁺ [1] on stimulation. The expression of these receptors on macrophages and their activation by vago-stimulation has recently been found to be crucial for novel arthritis treatment [2].

Objectives: Our aim in the present study was to assess the effect of various peptide, on cytokine production and nAChRs inhibition.

Methods: nAChR heterologous subunits were expressed in Xenopus oocytes and the inhibitory activity of various peptides at ACh-evoked currents were measured using an agonist pre-incubation assay (APA). Briefly, the 2B4.11 murine T cell hybridoma recognizing cytochrome c as an antigen was co-cultured with the antigen presenting B cell hybridoma line LK35.2 (I-Ek bearing) and pigeon cytochrome c in the absence or presence of (APA). ELISA and real-time PCR were performed to measure cytokine protein levels and nAChRs T-cells mRNA express levels separately.

Results: At 10μM, peptide W32052 had modest 50.55 % inhibition of human (h) δ3β2 and hβ2 nAChR subtypes, and 35% inhibition at hδ9010. W32052 greatly inhibited chimeric rat α1β10 mouse ε (85%) at 10μM. W32052 also inhibited IL-2, IL-6, TNF-α and GM-CSF production at 50μM in the APA. nAChRs antagonists, mecamylamine (100μM), RG1 (10nM), Vc1.1 (9010), and dihydro-β-erythroidine hydrobromide (αδβ4 and αδβ2), ELISA and real-time PCR were performed to measure cytokine protein levels and nAChRs T-cells mRNA express levels separately.

REFERENCES


EFFECT OF SIDAGURI EXTRACT (SIDA RHOMBOHIFOLIA L) ON URINARY CARBOXY-TERMINAL TELEPEPTIDES OF TYPE II COLLAGEN IN OSTEARTHRITIS PATIENTS

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Background: Osteoarthritis is one of the most common joint diseases in Indonesia and elsewhere. Assessment of the effectiveness of osteoarthritis therapy with biomarkers should be developed. One of the biomarker that can be used to assess the activity of osteoarthritis is Urinary Carboxy-Terminal Telepeptides of Type II Collagen. Indonesia is the center of world biodiversity, and Sida is one of the traditional plants that is believed to have many benefits including its anti-inflammatory effect and the ability to decrease level of uric acid. The β-sitosterol is an active component in Sida which has anti-inflammatory activity in osteoarthritis.

Objectives: To compare the effect of sidaguri and meloxicam therapy with meloxicam alone in decreasing the levels of urinary Carboxy-Terminal Telepeptides Of Type II Collagen in osteoarthritis patients.

Methods: This study was conducted on 24 patients with osteoarthritis at H. Adam Malik General Hospital Medan from April to June 2018. Subjects were divided into 2 groups, namely placebo and Sidaguri group. Levels of uCTX II were assessed before and after intervention. T-test was used to analyze the data using SPSS version 22.

Results: 83.3% of osteoarthritis patients in H. Adam Malik hospital who participated in this study were women with mean age 60.58 ± 9.74 years in the placebo group and 63.08 ± 6.14 years in the sidaguri group. The results showed that subjects receiving Sidaguri showed significant decrease in uCTX II before and after intervention (521.42 ± 369.99 vs. 330.75 ± 163.49 ng/mmol, p = 0.033). Meanwhile, in the placebo group also found decreased levels of uCTX II but it was not statistically significant (286.17 ± 163.82 vs. 218.25 ± 75.05 ng/mmol, p = 0.238). In addition, there was a significant difference between the mean of the two groups after the intervention (p = 0.046).

Objectives: There was a significant decrease in uCTX II levels in osteoarthritis patients who received Sidaguri extract for 30 days compared to the placebo group.

REFERENCES


CAN DIFFERENT INTERLEUKIN LEVELS PREDICT RESPONSE TO BIOLOGICAL TREATMENT IN PATIENTS WITH RHEUMATOID ARTHRITIS?

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Background: The cytokine family interleukin IL-17 has an important pro-inflammatory role; stimulating tumour necrosis factor (TNF), interleukin IL-1 and IL-6 production. It is subclassified into IL-17A, IL-17F and IL-17AF1. The interleukin IL-10 acts by blocking the secretion of pro-inflammatory cytokines2. We hypothesised that patients whose disease activity is not adequately controlled by TNF therapies in Rheumatoid Arthritis (RA) may have IL-17 driven disease and that lower IL-10 levels may play a permissive role.

Objectives: To determine if pre-treatment or 3 month IL-17/IL-10 concentrations correlate with treatment response to anti-TNF drugs by 6 months of treatment.

Methods: Data was collected from the Biologics in Rheumatoid Arthritis Genetics and Genomics Study Syndicate (BRAGGSS). Patients were followed up at pre-treatment and 3 months- according to EULAR classification by 6 months. To determine if pre-treatment or 3 month IL-17/IL-10 concentrations correlate with treatment response to anti-TNF drugs by 6 months of treatment.