Marijuana and Inflammatory Markers

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Background: Marijuana was used, according to World Drugs Report (UNODC), by 3.9% of the world population, which reveals the use of marijuana worldwide is expressive, although the literature about medical marijuana properties is inconclusive and lack of systematic reviews

Objectives: The aim of this study was to review the literatyre on marijuana effects on inflammatory markers

Material and Methods: We screened all articles, published on PubMed database, that cited inflammatory markers and any information about marijuana use between 1980 to May 2019

Flowchart about the review numbers

Results: The main findings were: i) among health volunteers and among marijuana users, cannabinoids seemed to decrease the inflammatory response; thus, decreasing the immune response, which led to a higher risk of infections; ii) among patients with Multiple Sclerosis (MS), cannabinoids seemed to have little impact on the inflammatory markers levels

Taking into account that auto-immune diseases, such as MS, Systematic Lupus Arythematosus, Rheumatoid arthritis, are very disabling both physically and mentally, the potential of decrease immune function by marijuana and cannabinoids extracts reveal a great importance of the cannabinoids on the inflammatory diseases treatment.

Conclusions: Although marijuana use can produce immune-inflammatory suppression in healthy people, this effect is not robust enough to change inflammatory markers' levels in situations of highly dysfunctional inflammatory activation. Nevertheless, the impact of cannabinoids in clinical outcomes of these conditions remains to be determined.

Summary table about the data extraction

Author, year	N	Measure	Major findings
Healthy volunteers			
Pacifi, 2006	94	Blood cell count; Lymphocyte response to mitogenic stimulation	MDMA-MJ group: ↓ in IL-2, ↓ in the number of total lymphocytes and ↑ levels of TGF-B1; MJ group: intermediate alterations; ↑ rate of mild infections in regular MDMA-MJ users
Marijuana users			
Sexton, 2012	10	Monocytes were isolated, and their migration quantified; CB1 and CB2 mRNA was quantified by qPCR	pCB inhibited the monocytes migration in both groups; CCL-2 stimulated the monocytes migration in subjects non-naïve to marijuana; qPCR indicates that monocytes from subjects non-naïve to marijuana express more CB1 mRNA; The phenotype among the monocytes from this two groups were significantly different
Multiple Sclerosis volunteers			
Kellestein, 2003	16	PBMC to T-cell proliferation; SL of cytokines	Modest increase in TNF-α; No significant changes in T-cell proliferation, leukocyte subsets or cytokines
Katona, 2005	130	SL of cytokine; CRP	No evidence for cannabinoid influence on serum levels of IFN, IL-10, IL-12 or CRP
Zajicek, 2005	630	Ashworth score; Rivermead mobility index and a several questionnaires	Comparison of the three groups (Placebo, marijuana extract and Δ-9-THC) showed evidence of a small treatment effect in total Ashworth score; Patients felt that cannabinoids helped their spasticity and their pain

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