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INFLAMMATORY RESPONSE INDUCED BY EXPOSURE TO DRY TOBACCO IN RURAL WORKERS

INTRODUÇÃO: Tobacco cultivation is of great social and economic importance in the southern region of Brazil. Many people work handling tobacco and end up being exposed to its compounds (pesticides, nicotine and tobacco-specific nitrosamines) for long periods during the harvest. These substances are known to cause DNA damage, mainly through oxidative stress. **OBJETIVO:** This study aimed to evaluate the inflammatory response triggered by exposure during the handling of dry tobacco. **MATERIAIS E MÉTODOS:** Sixty-eight individuals participated in the study, 34 of whom were exposed to dry tobacco and 34 were in the control group. Peripheral blood samples were collected between January and March 2020 in the cities of Santa Cruz do Sul and Sobradinho, in the state of Rio Grande do Sul, Brazil. The levels of tumor necrosis factor- α (TNF- α), interleukin-1 β (IL-1 β), interleukin-6 (IL-6), monocyte chemoattractant protein-1 (MCP-1), and interleukin-18 (IL-18) were evaluated using commercial ELISA kits. **RESULTADOS E CONCLUSÃO:** When evaluating the inflammatory profile of the samples (TNF- α , IL-6, IL-1 β , MCP-1 and IL-18), the results were significantly increased for all exposed groups compared to their respective control groups. Notably, a significant increase in IL-1 β and IL-6 levels was observed only in male participants, with all male subjects showing significantly higher values than female participants (Mann Whitney test $P < 0.05$). The results suggest that exposure to dry tobacco can cause significant damage related to oxidative stress, leading to increased expression of inflammatory proteins, particularly in rural workers. Understanding the interaction between oxidative stress and inflammation may provide insights into the health risks associated with occupational tobacco exposure.

Palavra-chave: Inflammatory response; exposure to dry tobacco; oxidative stress.

Apoio: CNPq e Fapergs