26° CONGRESSO NAZIONALE DELLE MALATTIE DIGESTIVE

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Topic: **1.1 UPPER GI - CELL/MOLECULAR BIOLOGY/PATHOLOGY, IMMUNITY AND INFLAMMATION (BUT NOT H. PYLORI)**

Abstract Title **ROLE OF EXTRACELLULAR MICROVESICLES IN CELIAC DISEASE AS POTENTIAL PATHOGENETIC AGENTS AND BIOMARKERS OF INTESTINAL INFLAMMATION.**

BACKGROUND AND AIM: **Celiac Disease (CD) is a chronic intestinal disease caused by the ingestion of gluten. Microvesicles (MVs) belong to a heterogeneous population, released by cells both in homeostasis and pathological conditions. MVs can be considered mediators of inflammation and potential biomarkers. The aim of this study is: 1) to evaluate the possible role of MVs in the propagation of inflammation in CD, using MVs purified by supernatant of duodenal biopsies from CD patients; 2) to identify potential biomarkers by proteomic analysis of pasma-derived MVs from CD patients.**

MATERIAL AND METHODS: **MVs were isolated by molecular exclusion chromatography and ultracentrifugation respectively from plasma and culture supernatant of duodenal biopsies of 10 active CD, 5 remission CD and 6 controls. Proteomic analysis of plasma-derived MVs was performed by mass spectrometry. The possible effects of duodenal-derived MVs on confluent Caco-2 cells were evaluated by measuring Transepithelial Electrical Resistance (TEER) and analyzing the expression of actin, tissue transglutaminase (TG2) and Zonula Occludens-1 (ZO-1). The dosage of IL-8 in the Caco-2 culture supernatant was carried out by ELISA test. The statistical analysis of the data obtained was performed using the**

	Student's t-test.
RESULTS:	**The proteomic analysis of circulating MVs showed 8 proteins from desmosome and cytoskeleton (desmoglein-1 and gamma-enteric actin) associated with the active phase of the disease. Caco-2 cells, treated with the MVs purified from the duodenal biopsies of active CD patients showed: 1) rearrangement of actin filaments; 2) increased expression of TG2; 3) decreased expression of the ZO-1 protein, although an alteration of intestinal permeability was not observed. The analysis of Caco-2 cell supernatants showed a statistically significant increase in IL-8 ($p < 0.05$), in the presence of MVs isolated from biopsies of active CD patients, compared to remission CD patients and controls.**
CONCLUSIONS:	**MVs isolated from plasma of active CD patients could represent potential diagnostic and prognostic biomarkers. Although they don't induce changes in intestinal permeability, MVs could contribute to inflammatory cascade increasing IL-8 production.**
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