COMPARATIVE SALIVA PROTEOME OF HEPATITIS-INFECTED SUBJECTS

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INTRODUCTION- Hepatitis B and C virus (HBV and HCV) infections are an important cause of cirrhosis and hepatocellular carcinoma. These viruses can be detected in blood and other bodily fluids, such as saliva. Today, a growing number of proof-of-principle assays have been established using saliva to monitor diseases or bodily conditions such as HIV infection, systemic levels of drugs and immune responses to viral infections (e.g., hepatitis B and C). Compelling reasons exist to use saliva as a diagnostic fluid. It meets the demands for inexpensive, noninvasive and easy-to-use diagnostic methods. Comparative analysis of salivary proteomic using mass spectrometry is a promising new strategy for identifying biomarkers. Our purpose is to apply Orbitrap-based quantitative approach to explore the salivary proteome profile in HBV and HCV infected patients.

MATERIAL AND METHODS- In the present study whole saliva was obtained from 10 healthy adults (control), 10 HBV-infected and 10 HCV-infected subjects. After sample collection, a protease inhibitor cocktail (PMSF) was added. Protein concentration was determined by using Lowry-Petterson method and the samples from each group were pooled for a total of 10 µg of protein. The samples were ultracentrifugated and separated using Microcon devices (cut off 10 kDa and 3 kDa), all fractions were hydrolyzed (trypsin) and injected in LTQ-VELOS ORBITRAP. The identification and analyses of peptides were performed by Proteome Discoverer1.3 and ScaffoldQ+v.3.3.1.

RESULTS AND DISCUSSION- From a total of 348 distinct proteins identified, 3 proteins were exclusively found in HCV and others 3 in HBV-infected subjects. The data showed a higher presence of several types of immunoglobulin fragments in HBV-patients and neutrophil collagenase in control group. Peptides of alpha-2-macroglobulin were less detected in HCV group.

CONCLUSION- This study provides an integrated perspective of salivary proteome that should be further explored in future studies targeting specific disease markers for HBV and HCV infection.