



**CELLULAR LOCALIZATION OF HEPATITIS DELTA VIRUS IN SJOGREN'S
SYNDROME SALIVARY GLAND TISSUE**

**Summer Furrer (Melodie Weller PhD, Matt Hesterman, Maria Chavez, Steve Hlavaty)
School of Dentistry**

Background:

Sjogren's syndrome (SS) is an autoimmune disease, predominantly affecting women, causing dry eyes, dry mouth, fatigue, and pain throughout the body (Le Goff et al., 2017). In a previous study, 50% of evaluated SS patients were found to have hepatitis delta virus (HDV) antigen in salivary gland tissue. Furthermore, HDV reproduced a SS phenotype when cannulated into mice salivary glands (Weller et al., 2016). Further studies are required to better understand HDV's role in SS; therefore, a study was designed to evaluate HDV profiles in a cohort of six SS and two Sicca patients.

Methods:

A focus score of 1 (≥ 50 inflammatory cells in 4mm^2 area) or greater is indicative of focal sialadenitis: one of many components of SS diagnoses (Segerberg-Kontinen et al., 1986). To assess the extent of focal lymphocytic infiltration, Hematoxylin and Eosin (H&E) staining was performed on FFPE human salivary gland tissues. Slides were mounted and imaged. The area of salivary gland within each slide was obtained and the number of foci/ 4mm^2 were calculated. All tissues then underwent immunohistochemical analysis using targeted antibodies for HDV antigen and subcellular localization markers. Slides were mounted and imaged. Localization of HDV antigen and subcellular markers were analyzed.

Results:

Tissue samples were classified using the 2016 American College of Rheumatology and the European League Against Rheumatism (ACR/EULAR) criteria (Shiboski et al., 2017). Based on respective patient data and focus scores, six samples were classified as SS, and the remaining two were classified as Sicca. Once tissue was stained with anti-HDAg and subcellular localization markers, there were regions of localization between select organelles and the HDV antigen. Further studies of SS salivary gland biopsies are needed to confirm these findings.