

A MODEL TO GRADE ORAL CHRONIC GRAFT-VERSUS-HOST DISEASE:
LARGE COHORT HISTOPATHOLOGICAL ANALYSIS

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Introduction: Graft-versus-host disease (GvHD) is a major complication in patients post hematopoietic stem cell transplantation (HCT). Oral complications include lichenoid-like reactions, restricted mouth opening and salivary gland dysfunction. Mucosal histopathological presentation is in great need of large cohort validation.

Aim: To define specific guidelines and grade oral cGvHD histopathology, with correlation to clinical indicators

Material and Methods: Oral mucosal samples (n=288) from 112 HCT-patients were obtained from Karolinska University Hospital (KUH) Biobank and Oral Maxillofacial Surgery Unit, KUH. Through validation, re-occurring prominent histopathological features were identified and a grading module established. Three independent researchers graded the remaining cohort. Clinical evaluation of archived material was conducted by two independent Oral Medicine Specialists.

Results: Histological features included band-like inflammation with intra-epithelial lymphocytes, basement membrane alteration, epithelial atrophy, apoptosis and liquefaction degeneration. Strong intra-observer agreement was seen ($\kappa > 0.6$) with broad variation of severity shown as none (22%), mild (30%), moderate (21%), severe (16%), extreme (11%).

Conclusion: The histopathological module provides a suitable platform to grade oral mucosal cGvHD, to define cohorts in trials when examining novel treatments, the pathological process and immunocellular content. Histological scoring related to clinical-severity will aid in the formulation of dynamic pathophysiological changes within oral mucosal cGVHD.