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Prognostic Value of Salivary Gland Ultrasonography in Primary Sjögren's Syndrome

Francesco Ferro¹, Gianmaria Governato¹, Giovanni Fulvio¹, Gaetano La Rocca¹, Silvia Fonzetti¹, Giacomo Aringhieri², Valentina Donati³, Marta Mosca⁴ and Chiara Baldini⁵, ¹University of Pisa, Rheumatology Unit, Pisa, Italy, ²University of Pisa, ³Diagnostic and Interventional Radiology, Department of Translational Research and of New Technologies in Medicine and Surgery, Pisa, Italy, ⁴AOUP, Unit of Pathological Anatomy, Pisa, Italy, ⁵Rheumatology Unit, Department of Clinical and Experimental Medicine, University of Pisa, Pisa, Italy, ⁵University of Pisa, Pisa, Italy

Background/Purpose: In the last decade, salivary gland ultrasonography (SGUS) has appeared as a useful tool for the diagnosis of primary Sjögren's syndrome (pSS) and for the identification of different disease phenotypes. Purpose: To evaluate the usefulness and prognostic value of SGUS in identifying pSS patients at risk of lymphoma

Methods: Sonographic data from a monocentric cohort of pSS patients were collected from 2012 to 2021. Salivary glands were scored using the latest 2019 OMERACT semiquantitative SGUS scoring systems (0-3) based on parenchyma inhomogeneity; SGUS \geq 2 indicates moderate or severe glandular alterations. For both the parotid glands (PG) and the submandibular glands (SMG), the worse finding of the two sides was used in the analyses. Patients demographics, clinical and histological data were recorded.

Results: We included 137 pSS patients (2 M:135 F, mean age 57 \pm 14 yrs) followed for a median follow-up of 43 (22) months. At baseline, 59/137 (43.1%) patients presented a PG-SGUS \geq 2 and 50/137 (36.5%) a SMG-SGUS \geq 2. Patients with a SGUS \geq 2 (either in their PGs or SMGs) presented more frequently hypergammaglobulinemia, Rheumatoid Factor, anti-Ro/SSA positivity and a higher focus score ($p < 0.01$). Patients with a PG-SGUS \geq 2 presented significantly more often markers of lymphoma development, such as salivary gland swelling, lymphopenia and low complement levels ($p < 0.01$). Over the follow-up, 4/137 patients developed a MALT lymphoma in their PGs. At baseline, all of them had a SGUS grade 3 in their PGs, and two had also a SGUS grade 3 in their SMGs. A significant association emerged between MALT lymphoma and both PG-SGUS \geq 2 and SMG-SGUS \geq 2 at baseline ($p < 0.05$). Particularly, PG-SGUS grade 3 was significantly associated with MALT lymphoma development ($p = 0.01$).

Conclusion: SGUS may help to identify pSS patients at risk of lymphoma. Patients presenting a PG-SGUS grade 3 deserve a careful assessment to recognize possible lymphoproliferative complications in severely damaged salivary glands.

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