BIOMARKERS

Potential utility of microRNA profiling in Sjögren's syndrome

Two of the key features of Sjögren's syndrome (SS) are impaired saliva production and inflammatory cell infiltration of the salivary glands. However, the severity of these two features does not correlate strongly, suggesting that nonimmune mechanisms might contribute to exocrine gland dysfunction. As improved biomarkers might help researchers to unravel the underlying pathophysiologic elements of SS, Alevizos and colleagues studied whether microRNA expression profiles could distinguish between patients with normal versus low salivary flow and between those with high versus low salivary gland inflammation.

Minor salivary gland biopsy specimens were obtained from 16 female patients with primary SS and 8 female controls. Of the 16 patients, half had low-grade inflammation and half had extensive inflammation. MicroRNA expression profiles of the

salivary gland specimens were analyzed using several statistical techniques.

Patterns of microRNA expression were able to distinguish control samples from those of patients with SS. Importantly, normal tissue could also be distinguished with high accuracy from SS samples with low levels of inflammation—tissues with minimal histologic differences. Interestingly, the authors also found that various neurologic functions seemed to be targeted by certain sets of differentially expressed microRNAs.

This proof-of-concept study indicates that microRNAs could have a highly promising future as biomarkers in SS.

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Original article Alevizos, I. *et al.* MicroRNA expression profiles as biomarkers of minor salivary gland inflammation and dysfunction in Sjögren's syndrome. *Arthritis Rheum.* 63, 535–544 (2011)