A novel molecular disease classifier for psoriasis and eczema.

Abstract:

Novel specific therapies for psoriasis and eczema have been developed, and they mark a new era in the treatment of these complex inflammatory skin diseases. However, within their broad clinical spectrum, psoriasis and eczema phenotypes overlap making an accurate diagnosis impossible in special cases, not to speak about predicting the clinical outcome of an individual patient. Here, we present a novel robust molecular classifier (MC) consisting of NOS2 and CCL27 gene that diagnosed psoriasis and eczema with a sensitivity and specificity of >95% in a cohort of 129 patients suffering from (i) classical forms; (ii) subtypes; and (iii) clinically and histologically indistinct variants of psoriasis and eczema. NOS2 and CCL27 correlated with clinical and histological hallmarks of psoriasis and eczema in a mutually antagonistic way, thus highlighting their biological relevance. In line with this, the MC could be transferred to the level of immunofluorescence stainings for iNOS and CCL27 protein on paraffin-embedded sections, where patients were diagnosed with sensitivity and specificity >88%. Our MC proved superiority over current gold standard methods to distinguish psoriasis and eczema and may therefore build the basis for molecular
diagnosis of chronic inflammatory skin diseases required to establish personalized medicine in the field.