

STSM report

STSM Topic: Epidermal barrier properties and individual susceptibility

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COST Action: TD1206

STSM type: Regular (from Italy to Germany)

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Objectives of the STSM was: (i) to study epidermal barrier properties and individual susceptibility to develop reduced skin barrier function; (ii) to learn skin bioengineering techniques to assess epidermal skin properties; (iii) to get to know the experience of the Institute for Interdisciplinary Dermatological Prevention and Rehabilitation (iDerm) in prevention and handling of occupational skin diseases.

Work carried out during the STSM:

- (i) I observed the management of in-patients and out-patients with occupational skin diseases, including dermatological examinations, allergological assessments, such as diagnostic tests (e.g. Prick test, Patch test), treatment and legal evaluation.
- (ii) I attended the “skin protection seminars” learning more about recommendations for prevention, skin protection, skin care and skin cleansing.
- (iii) I got to know various methods of occupational health education.
- (iv) I learned techniques to quantify non-invasively skin barrier function by measuring Transepidermal Water Loss (TEWL) and corneometry.
- (v) techniques to assess skin irritability (Swift modified alkali resistance test).
- (vi) and techniques to take skin samples (tape stripping) and DNA samples for further analysis.

Main results obtained:

- (i) I got to know the interdisciplinary approach to occupational skin diseases of the Institute for Interdisciplinary Dermatological Prevention and Rehabilitation (iDerm), as a model to prevent work related dermatitis.
- (ii) I acquired techniques to study epidermal barrier function.

Benefits and perspectives: We aim to carry out a follow-up study in a group of patients with suspected occupational skin disease who had been seen in our clinic (Unit of Occupational Medicine in Trieste – Italy) from January 2011 to the end of 2013. The patients will be contacted again in order to invite them to undergo an examination which also includes the compilation of a questionnaire and the measurement of the TEWL. Patients will also be invited to participate in a training program for prevention of hand dermatitis (skin protection, skin care and skin cleansing, during working and extra-working activities). After 3-4 months, they will be invited again to a follow up (with questionnaire compilation and measurement of TEWL).

The final objective is to monitor the developments of occupational dermatitis and to study how preventive measures may affect the persistence or improvement of skin disease.

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