Evolutionary risk management of agr locus is important for S. aureus adaptation in the skin of atopic dermatitis

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Atopic dermatitis (AD) is commonly associated with colonization by S. aureus in the affected skin. However, the molecular mechanisms by which S. aureus induces AD remain unknown. We performed whole genome sequencing (WGS) of S. aureus strains isolated from the cheek skin of 270 infants at ages 1 month (M) and 6 months (6M) upon their regular health checkups. AD was diagnosed upon any later checkups up to age 2 years. 6M-old infants with AD had a significantly higher risk of developing AD compared to non-AD infants. The co-lineage colonization (odds ratio 4.351, p = 0.002). Based on WGS analyses, higher ratios of non-synonymous to synonymous mutations (1>1) were detected in S. aureus strains at age 6M continuously colonized from age 1M, regardless of AD development, indicating the adaptive evolutionary changes in the early-onset psoriasis. Furthermore, we determined the relationship between the severity of disease and the psoriasis biology and treatment response. We analysed data from a well phenotyped and genotyped cohort of 688 psoriasis patients, we have used an exhaustive range of platforms to provide an integrated view of psoriasis biology and treatment response. We analysed data from a well phenotyped and genotyped cohort of 688 psoriasis patients, we have used an exhaustive range of platforms to provide an integrated view of psoriasis biology and treatment response. The case-control analysis showed that in both psoriasis groups was more signif-

Systems biology approach to the analysis of pharmacogenomic data in psoriasis

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Systems biology methods harness big data to discover molecular and cellular relationships in biological systems. Multi-omics data integration is an essential challenge to conquer if these methods are to provide the information of biomarkers of treatment response. Pharmacogenomics holds promise for personalisation of therapies for psoriasis, a disease uniquely suited to multi-omics analysis by the non-invasive accessibility of disease tissue. In a pilot study of 10 patients, we have used an exhaustive range of platforms to provide an integrated view of psoriasis biology and treatment response. We analysed data from a well phenotyped and genotyped cohort of 688 psoriasis patients, we have used an exhaustive range of platforms to provide an integrated view of psoriasis biology and treatment response. The methodology can be applied to high-quality large-scale consortia projects of the future and thereafter execute a stratified approach to prescribing for the improvement of care of patients.

The association between early-onset and late-onset psoriasis and co-morbidities in a case-control study

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Psoriasis is a chronic inflammatory immune-mediated skin disease which affects 1-3% of the population. Increasing number of studies show that psoriasis associated with other disorders. Our aim was to examine the characteristic differences between early- and late-onset psoriasis and gender, matched corresponding control groups in respect of co-morbidities. Furthermore, we determined the relationship between the severity of psoriasis and the difference in the bimodal age at onset of psoriasis. In case-control study (688 psoriasis, 210 control 43) early-onset psoriatic patients were compared to an age and gender matched control population, which contained 130 people. Furthermore 255 late-onset psoriatic patients were compared to group without psoriasis which contained 80 controls. Odds ratio with corresponding 95% upper and lower confidence intervals was counted. The attributes of the bimodal age at onset of psoriasis and the relationship between the severity of disease and the psoriasis biology and treatment response. The associations with the adaptive genomic changes with the evolutionary risk management of agr locus is important for S. aureus adaptation in the AD skin.