

INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

## DIABETES MELLITUS AFFECTS THE FOOT SKIN MICROBIOME

Yw Lee<sup>(1)</sup> - Jy Hong<sup>(1)</sup> - Jh Kim<sup>(1)</sup> - Jr Hong<sup>(1)</sup> - Hi Cheon<sup>(1)</sup> - Ms Hur<sup>(1)</sup> - Yb Cheo<sup>(1)</sup> - Kj Ahn<sup>(1)</sup>

*Konkuk University School Of Medicine, Department Of Dermatology, Seoul, Republic Of Korea<sup>(1)</sup>*

**Introduction:** Immune dysfunction in patients with diabetes allows pathogens to prevent wound healing. However, the database on the cutaneous microbiome in diabetic patients has been restrictive.

**Objective:** To compare the fungal and bacterial components of the skin microbiome between patients with type 2 diabetes mellitus and healthy individuals.

**Materials and Methods:** We obtained skin swab samples from the plantar forefoot of 17 type 2 diabetic patients and 18 healthy individuals. Using a culture-independent sequencing method followed by direct DNA extraction and molecular PCR, taxonomic compositions at stepwise level ranks were identified and biodiversity was assessed.

**Results:** We observed a differential cutaneous microbiome, especially for fungi, in patients with type 2 diabetes compared with healthy controls. Thirty-five differentiating fungal components were identified and assigned as "taxonomic biomarkers" ( $p < 0.05$ ). The Shannon diversity index for fungi decreased in patients ( $p < 0.001$ ), whereas species richness for both fungi and bacteria showed a reduction ( $p < 0.001$  and  $p < 0.05$ ).

**Conclusions:** The microbial alterations may result from modification of the innate immune response in type 2 diabetes mellitus. The distinct microenvironment created by hyperglycemia and vascular impairment in diabetes may also alter the microbial population. We believe that our data can contribute to future research, which would help evaluate dysbiosis in diabetic patients and provide possible prevention or treatment.