Abstract

Background Basal cell carcinomas (BCCs) have previously been treated off-label with ingenol mebutate (IM). Ablative fractional laser (AFL) may improve efficacy of IM by increasing drug uptake in the tumour. Optical coherence tomography (OCT) and reflectance confocal microscopy (RCM) detect BCC non-invasively. Our aim was to investigate BCC response and tolerability after combined AFL and IM treatment of low-risk BCCs.

Methods Twenty patients with histologically verified superficial (n = 7) and nodular (n = 13) BCCs were treated with combined fractional CO_2 -laser (10 600 nm) and IM 0.015% or 0.05%, the concentration depending on anatomical location. BCC response was evaluated clinically, by OCT and RCM at day 2 9 and 90 after first treatment, and histologically at day 90. Treatment was repeated at day 2 9 if BCC persisted. Local skin reactions (LSRs) were assessed using LSR scale at all visits.

Results At day 2 9, 18/2 0 patients received a second treatment due to residual BCC detected clinically, by OCT or RCM. OCT and RCM presented subclinical BCCs in five of 2 0 cases (2 5%). At day 90, overall histological cure rate was 7 0%, corresponding to clinical (65%) and OCT/RCM (60%) cure rates, and agreement between evaluation methods was substantial (kappa $\geq$ 0.7 96, $P < 0.0001$). Clearance rates were similar for sBCCs and nBCCs ($P = 0.3$ 54) and for lesions treated with IM 0.015% and 0.05% ($P = 0.141$). LSRs were tolerable, but scarring was observed in the majority of cleared patients.

Conclusion Two treatments of combined AFL and IM show potential to treat low-risk BCCs with acceptable tolerability. OCT and RCM show promise to detect subclinical BCCs at short-term follow-up.