# EGF IN CLINICAL PRACTICE

Table 1  EGF in peripheral tissue healing

| Author/Ref. | Indication | Route/dose and durat | Number of patients | Study | Outcome | Safety |
|---|---|---|---|---|---|---|
| Brown (23) | Acceleration of epidermal regeneration of donor sites | Topic; EGF 10 mcg/ml until re-epithelialisation | 12 patients; controlled within patient, side/side (EGF/SS) | DBRCT | Acceleration of the rate of healing | Not described |
| Alert (24) | Prevention of skin burns by radiotherapy | Topic; EGF 10 mcg/g of SSC/twice a day, for the whole radiotherapy programme | 23 patients for EGF cream | POL | Potent radioprotection | Not described |
| Brown (25) | Healing stimulation of different types of chronic wounds | Topic; EGF 10 mcg/g of SSC until healing | 9 patients crossed over to EGF | POL-crossover | Wounds closure in eight patients | † |
| Falanga (26) | Healing of venous ulcers | Topic; EGF 10 mcg/ml/10 weeks or until healing | 17 EGF/18 PL | DBRCT | Greater reduction in ulcer size and larger number of ulcers healed | Follow-up not mentioned. Well tolerated |
| Borges (27) | Burn wounds healing enhancement | Topic; EGF 10 mcg/g of cream/48 hours until healing | 10 pediatric patients for EGF group | Phase II. DBRCT | Wound healing and re-epithelialisation enhancement | Well tolerated |
| Cohen (28) | Healing of controlled wounds | Topic; EGF 10 mcg/g of SSC/twice daily, no longer than day 21. | 17 healthy volunteers/wounds for EGF | DBRCT | No difference in wound healing | Well tolerated |
| Gonzalez (29) | Healing stimulation of venous ulcers | Topic; EGF 10 mcg/g of cream; thrice a week / 6 weeks | 40 patients for EGF creams | DBRCT | Wound healing enhancement by EGF | Well tolerated |
| Rodriguez (30) | Acne progress control and scars amelioration | Topic; EGF 10 mcg/g of cream/24 hours for 6 weeks | 30 patients for EGF | DBRCT | Acne control and scars attenuation | Well tolerated |
| Tsang (18) | Healing of diabetic foot ulcers | Topic; EGF 0 02–0 04% for 12 weeks | 21 per EGF concentration group | DBRCT | Enhancement of healing and healing time reduction | Follow-up–6 months. Well tolerated |

Table 1 (*Continued*)

| Author/Ref. | Indication | Route/dose and duration | Number of patients | Study | Outcome | Safety |
|---|---|---|---|---|---|---|
| Hong (19) | Healing of diabetic foot ulcers | Topic; EGF 005% + dressing until healing | 68 patients crossed over to EGF | POL-Crossover | Enhanced healing of neuropathic foot ulcer | Follow-up–6 months. Well tolerated |
| Viswanathan (31) | Efficacy and safety of EGF gel in patients with Grade I or II DFU | Topic; EGF 150 mcg/g up to 16 weeks* | 30 EGF / 30 PL | Phase III-DBRCT | Enhancement of healing and healing time reduction | Well tolerated. Follow-up for 2 years |
| Berlanga (32) | Efficacy of EGF local infiltrations in terminal DFU | Local EGF (intralesionally) injected at 25–125 mcg/ulcer, thrice a week up to 8 weeks | 29 patients for EGF | POL | Stimulation of ulcer granulation | Well tolerated. 1-year follow-up |
| Fdez-Montequin (33) | Efficacy of EGF local infiltrations in terminal DFU | IDEM. injected at 25 or 75 mcg/ulcer, thrice a week up to 8 weeks | 41 patients for either EGF dose | Phase II. DBR-dose controlled | Stimulation of ulcer granulation | Well tolerated. 1-year follow up |
| Mohan (34) | Healing rate, reduction of healing time | Topic; EGF 150 mcg/g for 15 weeks or total healing | 135 only for EGF | Phase IV (PMS) | Enhancement and speeding for the healing process of DFU | Well tolerated |
| Tabrizi (35) | Reduction of healing time for PV lesions | Topic; EGF 10 mcg/in SSC until healing | 20 patients. Controlled within patient, left/right | DBRCT | Significant reduction in healing time | Well tolerated |
| Betancourt (36) | Efficacy of EGF local infiltrations for ulcer healing | Injected into the ulcer 75 mcg, thrice a week up to re-epithelialisation | 20 patients | POL | Stimulation of ulcer granulation and re-epithelialisation | Well tolerated |

Treatment was prolonged even if wounds healed earlier to check for adverse effects.

[†]Although safety data are not explicitly described, it can be inferred that patients were followed for years when the authors described ulcers recur in a period between 1 and 4 years.

EGF, epidermal growth factor; DBRCT, double-blind-randomised-controlled trial; POL, prospective open-label; PL, placebo; Mcg, microgram; PV, pemphigus vulgaris; PMS, post-marketing surveillance study; DFU, diabetic foot ulcers; SS, silver sulphadiazine cream.

Table 2 EGF for the gastrointestinal system—Clinical studies and case reports

| Author/Ref. | Indication | Dose, duration, route | No. of patients | Study | Outcome | Safety |
|---|---|---|---|---|---|---|
| Elder (37) | Research study in HV and ZES | EGF 025 μg/kg/h for 1 hour IV | 4 ZES patients and 4 normal subjects | POL | Reduction in gastric hypersecretion. Ulcer pain relieved | Well tolerated |
| Koffman (38) | Research study | Daily infusions of 1 hour. EGF 025 μg/kg/h for 5 days IV | 5 duodenal ulcer patients | POL | EGF modifies gastric acid secretion | Not described |
| Walker-Smith (39) | Microvillous atrophy | EGF 100 ng/kg/h for two 6-day periods IV | 1 pediatric patient with microvillous atrophy | CR | EGF-induced crypt cells proliferation | Well tolerated |
| Drumm (40) | Microvillous atrophy | EGF 100 ng/kg/h for 21 days. IV and enteral | 2 pediatric patients | CR | EGF-stimulated intestinal cells mitosis | Well tolerated |
| Sullivan (41) | NEC | EGF 100 ng/kg/h for 6 days IV | 1 pediatric patient | CR | EGF-stimulated intestinal cells mitosis | Well tolerated |
| Itoh (42) | Gastric ulcer healing | IV 6 mcg/patient, twice a week for 8 weeks | 86 patients for EGF | DBRCT | Enhanced ulcer healing | Well tolerated |
| Haedo (43) | Duodenal ulcer healing | Oral. EGF at 450 or 600 mg/day for 6 weeks | 47 patients for EGF | DBRCT | EGF treatment shortened healing time | Well tolerated |
| Palomino (44) | Stimulation of duodenal ulcer healing | Oral. 450 or 2250 mcg/day/6 weeks or until complete healing | 68 patients for EGF | DBRCT | EGF-stimulated ulcer healing in a dose–response manner | Well tolerated |
| Sinha (45) | UC healing by EGF | Daily rectal enemas. EGF 5 mcg/in 100 ml of carrier for 14 days | 14 patients | DBRCT | EGF enemas are an effective treatment for active UC | Well tolerated |
| Sigalet (46) | Intestinal physiology improvement | Oral. 100 mcg/kg/day for 6 weeks | 5 pediatric patients | POL | EGF improved different parameters | Well tolerated |
| Sullivan (47) | Trophic effect on the GITM | IV EGF continuous infusion at 100 ng/kg/h for 6 days | 8 neonates | PRDB | Enhancement of mucosal remodeling and trophism | Well tolerated |

EGF, epidermal growth factor; DBRCT, double-blind randomised-controlled trial; POL, prospective open-label; CR, case report; PRDB, prospective randomised, double blind; Mcg, microgram; ZES, Zollinger–Ellison syndrome; HV, healthy volunteers; UC, ulcerative colitis; mg, milligram; IV, intravenous, GITM, gastrointestinal tract mucosa; NEC, necrotising enterocolitis.