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Anti-epidermal growth factor/epidermal growth factor receptor therapeutic anti-cancer drugs and the wound healing process.

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Background: Cutaneous wound healing is a complex process involving blood clotting, inflammation, tissue formation, and tissue remodeling. Many experimental and clinical studies have demonstrated varied, but in most cases beneficial, effects of exogenous growth factors on the healing process. The use of targeted anti-cancer agents is increasing. It is common to utilize a multi-modal treatment approach towards solid tumors, often including surgical resection, and it has become apparent that some targeted agents can impair wound healing or cause increasing risk of perioperative complications. There are limited data regarding the wound healing process of anti-cancer target drugs blocking the epidermal growth factor/epidermal growth **factor receptor** (EGF/EGFR) system. The aim of this paper is to review the effects of anti-EGF/EGFR drugs on the skin wound healing process after programed or emergency surgical procedures. **Materials and Methods:** In the non-clinical setting, Female BALB/c mice, aged 13–14 weeks were immunized with an EGF-vaccine by intramuscular route. In the second study mice were vaccinated with the extracellular domain (ECD) of autologous EGFR to overcome the tolerance to self-EGFR. Because EGF/EGFR-signaling plays an important role in the inflammation stage of wound healing; the main objective of these studies were to explore the possible role of the murine EGF and (m) EGFR-ECD vaccines in the croton-oil-induced ear edema and wound healing process in mice mimicking the possible post-surgical wound complications. In the clinical setting, a review of the current literature was undertaken. We included the monoclonal antibodies cetuximab, panitumumab, nimotuzumab; the small tyrosine kinase molecules sorafenib and sunitinib; and the EGF-based cancer vaccine; CIMAvax and the EGFR-based cancer vaccine; HER-1 vaccine. **Results:** Apparently, there are no deleterious effects of the anti-EGF/EGFR drugs in the wound healing post-operative process. **Conclusions:** Taking into account that treatment with anti-EGF/EGFR drugs inhibits tumor cell proliferation, and the lack of deleterious effects of these vaccines in the wound healing post-operative process; we suggest that these kinds of drugs could be maintained and their effects tested, with very special surveillance during the post-surgical period.