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Basal cell carcinoma: real-life burden on healthcare and simplified destructive treatments

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademin, Göteborgs universitet kommer att offentligen försvaras i Sal Europa, Wallenbergs Konferenscentrum, Medicinaregatan 20, Göteborg, den 10/11 2023, klockan 13.00

av **Eva Backman**

Fakultetsopponent:

Professor Tamar Nijsten

Erasmus University Rotterdam, Nederländerna

Avhandlingen baseras på följande delarbeten

I. Backman E, Oxelblom M, Gillstedt M, Dahlén Gyllencreutz J, Paoli J. "Basal cell carcinoma: Epidemiological impact of clinical versus histopathological diagnosis." J Eur Acad Dermatol Venereol 2023; *37*(3): 521–527.

II. Backman E J, Polesie S, Berglund S, Gillstedt M, Sjöholm A, Modin M, Paoli J. "Curettage vs. cryosurgery for superficial basal cell carcinoma: a prospective, randomised and controlled trial." J Eur Acad Dermatol Venereol 2022; 36(10): 1758–1765.

III. Backman E, Polesie S, Gillstedt M, Sjöholm A, Nerwey A, Paoli J. "Curettage plus one or two cycles of cryosurgery for basal cell carcinoma with clinically nodular features - a prospective randomized controlled trial". J Am Acad Dermatol 2023 Jun 8; Online ahead of print.

IV. Backman E, Heckemann B, Gillstedt M, Polesie S, Paoli J. "Cosmetic outcome following destructive treatments for non-facial basal cell carcinomas and patient treatment preferences – a mixed methods study". In manuscript.

SAHLGRENSKA AKADEMIN
INSTITUTIONEN FÖR KLINISKA VETENSKAPER

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Basal cell carcinoma: real-life burden on healthcare and simplified destructive treatments

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Abstract: Basal cell carcinoma (BCC) is the most common cancer in humans. With steadily increasing incidence rates, there is a constant need to evaluate current diagnostic methods and treatment alternatives to achieve effective care for the patients while considering available healthcare funding. This thesis consists of four original papers and addresses potential changes concerning the burden of BCC but also evaluates whether destructive treatment methods can be further simplified with maintained effectiveness and patient satisfaction.

Paper I compared clinically diagnosed BCCs with histopathologically confirmed BCCs to make an estimation of how well official statistics reflect real-world data. The study indicated that the burden of BCC in Sweden may be up to 70% higher than reported in official statistics and that BCCs with truncal location and superficial subtype were more prevalent than previously reported, especially among males. Papers II to IV are components of a larger research project, with randomized controlled trials, comparing different destructive treatment protocols for various subtypes of low-risk BCCs. In Paper II, the effectiveness of curettage alone *vs* cryosurgery in a single freeze-thaw cycle for superficial BCCs was compared. The 1-year clinical clearance rates were 95.7 *vs* 100%, respectively (P=0.060). Oozing wounds lasted 0.8 weeks after curettage and 1.6 weeks after cryosurgery (P<0.0001). Paper III evaluated the effectiveness of curettage followed by cryosurgery in one or two freeze-thaw cycles for nodular BCCs. The 1-year clearance rates were 99% *vs* 100%, respectively (P=1). The average duration of oozing wounds was 1.0 week for one cycle and 1.2 weeks for two cycles (P=0.062). Paper IV employed a mixed methods design to investigate cosmetic outcomes and patients' preferences when deciding upon BCC treatment. The objective evaluation of cosmetic outcome was not comparable to patients' satisfaction with their scars. For non-facial BCCs, most patients reported little concern about scarring. Their primary consideration was the expected clearance rates of the available treatments.

Taken together, the results indicate that official statistics based on histopathologically confirmed BCCs significantly underestimate the true number of BCCs and that low-risk BCCs are more common than described. These low-risk lesions can be safely treated with simplified destructive treatments and patients seem to value an effective treatment more than an excellent cosmetic outcome.

Keywords: Basal cell carcinoma, cosmetic outcome, cryosurgery, curettage, dermoscopy, epidemiology, randomized controlled trial.

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