The role of Electrochemotherapy in the treatment of Gorlin-Goltz syndrome

A simple solution for challenging situations
Introduction

Electrochemotherapy is a treatment combining a low dose of a chemotherapy drug and an electrical pulse (electroporation) applied directly to the cancer cells using an electrode.

This low level dose of chemotherapy drug is not normally effective against the cancer, as it is difficult to get inside the cells. When the electrical pulse is applied, the cells form pores allowing the drug to enter and be active against the cancer.

Electrochemotherapy as ‘a new treatment option’[1] for Gorlin–Goltz patients

“We consider Electrochemotherapy to be an additional tool in the therapeutic armamentarium for Gorlin-Goltz syndrome, and suggest using it as early as possible in selected patients to avoid disfiguring scarring.”

Gorlin-Goltz syndrome is a rare multisystemic disease, characterized by numerous basal cell carcinomas (BCC). The ideal approach for patients with the syndrome would be a treatment with a high cure rate, minimal scarring, short healing time and mild side effects. Electrochemotherapy is a therapeutic option that ablates tumours with electrical current and simultaneously administered anti-cancer drugs. Two recent studies have examined the use of Electrochemotherapy to treat this rare syndrome.

“Recent discoveries suggest that in addition to the direct cytotoxic effect of ECT on tumour cells, there may also be an indirect effect on the tumour, decreasing the blood flow with consequent extensive tumour necrosis”[3]
Clinical experience

- Clinical response was obtained in 99% of the lesions, 87% of them showed complete response.
- Long-term cosmetic results were excellent.
- Biopsies were taken 3 months after treatment from two treated lesions, where clinically no residual tumour could be detected.
- Due to the low doses of Bleomycin used during Electrochemotherapy, no systemic side-effects were observed.
- Electrochemotherapy might allow tumour antigen shedding and local inflammation, thus attracting immune antigen-presenting cells\(^4\).
- No recurrence was experienced on treated tumours in the follow-up (10–28 months).
- Numerous tumours can be treated at the same time with curative intent, and sessions can be repeated if necessary.

Conclusion

Electrochemotherapy is feasible and effective on unresectable BCCs. The advantages of this therapy are its simplicity, the short duration of treatment sessions, insignificant side effects, and repeatability. In addition, Electrochemotherapy has the advantage of achieving good local tissue preservation, less scarring and a good cosmetic outcome, thus improving the quality of life\(^2\). Electrochemotherapy under general sedation is a good choice to treat BCCs in Gorlin–Goltz syndrome, especially in patients presenting with multiple high-risk skin tumours.
References

