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Editorial Note on Topical Therapy in Skin Cancer

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Editorial

Skin cancer is the most common type of cancer, affecting a large percentage of people in many countries around the world. The skin has a large surface area that is exposed to a variety of harmful environmental factors such as chemicals, toxic substances, and ultraviolet rays, which appear to cause abnormal cell growth and, eventually, cancers. The cellular origin of the skin cancer determines whether it is Melanoma Skin Cancer (MSC) or Non-melanoma Skin Cancer (NMSC). Melanoma is the least common type, but it is responsible for a large number of deaths among skin cancer patients. The incidence of NMSC, on the other hand, is higher, and it is divided into two types: Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC). The cancerous cells may spread to a distant part of the body and metastasize to form melanoma, which may go undiagnosed and thus not be treated in a timely manner [1].

Chemotherapy is the most commonly used method for destroying skin cancerous cells. However, it has a number of unfavourable side effects in the treatment of skin cancer, including decreased systemic effects and bioavailability. Furthermore, chemotherapeutic agents are unable to distinguish between normal and cancerous cells. As a result, nanotechnology emerges as an outstanding solution for drug delivery. This technology employs polymer nanoparticles (NPs), which allow the primary drug to reach the targeted region via a versatile, biocompatible, biodegradable, and nano sized delivery vehicle. Prolonged circulation of NPs in cancer enhances drug availability to tumour tissues via direct permeation and diffusion to cells or enhanced permeation and retention effects [2].

The transport of NPs across distinct skin layers may face difficulties in permeation and penetration, most likely due to the hard and horny stratum corneum multilayer, followed by dermis barriers. The drug may be transported by NPs through skin appendages such as hair follicles, sebaceous and sweat glands. Because of their deeper penetration and drug release into different skin layers, including the stratum corneum, hair follicles may act as reservoirs for polymeric NPs. Particles less than 10 nm in size are easily excreted and phagocytized [3]. Internalization of NPs in target cells occurs through a series of biological events that include early and late endosomes fusing with the lysosome, diffusing into the cytoplasm, and finally destined in the cells' nucleus. They can also enter cells via the pinocytosis or phagocytosis processes. The transport of nanoparticles into the tumour region is primarily dependent on physicochemical properties such as size, surface, topography, and nano-biointeraction in the biological milieu.

A gel is a three-dimensional swellable polymeric network with hydrophilic groups that are cross-linked by a strong interaction force and can contain both hydrophilic and lipophilic drugs. It has high biocompatibility, biodegradability, flexibility, drug stability, and controlled drug release properties. Furthermore, it has the ability to retain a large amount of aqueous fluid without dissolving onto them, and it is widely used in drug delivery and biomedical engineering [4]. The polymeric network in the gel system is important in determining physicochemical properties and hydrophilicity, as well as controlling particle size; small pores in the polymeric network allow small molecules to be accommodated.

Because of their broad range of biological activity, bioactive agents derived from natural sources have been widely used in pharmaceutical and nutraceutical preparations in the modern era. Intriguingly, combining nanotechnology and phytomedicine may provide alternative cancer treatment strategies because these bioactive agents normally cause no harm and have minimal side-effects and toxicity at appropriate doses [5]. Encapsulating phytoconstituents in polymeric nano carriers can boost their activity. Several phyto-based NPs are being designed and developed for site-specific targeting in order to improve drug therapeutic efficacy and potency.

Conflict of Interest

None.

References

1. Neville, Julie A, Erin Welch, and David J Leffell. "Management of nonmelanoma skin cancer in 2007." *Nat Clin Pract Oncol* 4 (2007): 462–469.
2. Rogers, Howard W, Martin A Weinstock, Ashlynne R Harris, and Michael R Hinckley, et al. "Incidence estimate of nonmelanoma skin cancer in the United States, 2006." *Arch Dermatol* 146 (2010): 283–287.
3. Ackroyd, Roger, Clive J Kelty, Nicola J Brown, and Malcolm W Reed. "The history of photodetection and photodynamic therapy." *Photochem Photobiol* 74 (2001): 656–669.
4. Daniell, MD, and JS Hill. "A history of photodynamic therapy." *Aust NZ J Surg* 61 (1991): 340–348.
5. Fitzpatrick, Thomas B, and MA Pathak. "Historical aspects of methoxsalen and other furocoumarins." *J Invest Dermatol* 32 (1959): 229–231.

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