CME MCQ – 16

Photodynamic therapy for keratinocyte cancer

Photodynamic therapy (PDT) has in recent years gained popularity, first as an experimental therapy, then as a primary or palliative therapy for many human cancers. For dermatological purposes topical application of protoporphyrin IX inducing precursor are of particular interest.

1. Currently in Europe the only photosensitizer approved in dermatology is methyl aminolevulinate (Metvix). Which of the following lesions have been approved for this particular type of PDT:

A. Nodular basal cell carcinoma
B. Superficial basal cell carcinoma
C. Actinic keratosis
D. Bowens disease

2. The mechanisms by which 5-ALA-based photosensitizers induce selective tumor destruction during PDT have been studied in detail. Each of the following statements have been documented by laboratory findings except:

A. Selective uptake by epithelial cells
B. Conversion into photosensitizing porphyrins
C. Generation of reactive oxygen species leading to apoptosis or necrosis
D. Vascular brakdown of the tumor microcirculation

3. Each of the following has been postulated or documented advances of PDT except:

A. Comparable clinical outcome to standard treatments
B. Simultaneous treatment of multiple and incipient tumors
C. Excellent histological control
D. Short healing times

Recommended answers (based on Szeimies et al: Photodynamic Therapy for Non-melanoma Skin Cancer; Acta Derm Venereol 2005; 85: 1-8):

1. A, B, C are correct answers.
2. D: In contrast to systemic photosensitizers, where vascular brakdown of the tumor is one of the main mechanisms of action of PDT, topical PDT has only minimal effect on tumor vasculature.
3. A, B, D are correct. Unlike surgery PDT does not provide histological control.