Injecting growth factor into diabetic foot ulcers

Diabetic foot ulcers are full-thickness wounds penetrating through the deep layers of the skin below the ankle in patients with diabetes. They are feared because they are difficult to heal and can prompt amputation of the limb. Diabetes-related peripheral neuropathy and ischaemia due to vascular damage are responsible for the development and lack of healing of these ulcers. Unlike in other wounds, there is a failure to trigger proliferation of granulation tissue, impaired wound contraction and alteration in the regrowth of epithelium.

Hyperglycaemia is the primary trigger for the toxic changes that lead to thickening of vessel walls, which reduces function in the vascular system. Growth factor has a crucial role in development, and continues to have an effect on cell metabolism in health and disease. It is an ingredient in body fluids, including breast milk and saliva. Once the skin barrier has been disrupted, the healing response normally starts with alarm signals from cells. The response is led by growth factors that release sources including platelets, immune inflammatory cells, fibroblasts, endothelial cells and keratinocytes.

It was thought that application of growth factor directly to diabetic ulcers may aid healing, but early experiments were disappointing. It may be, however, that infiltrating growth factor by injecting it into the base of the wound could overcome the problems seen in simple topical application and so help kick-start healing.


Impulse control disorders and levodopa-induced dyskinesias

Dopaminergic medications, such as levodopa, are used in patients with Parkinson’s disease. However, they are associated with motor and behavioural side effects, including dyskinesias and impulse control disorders.

Dyskinesias, involuntary movements associated with long-term levodopa treatment, occur in up to 80% of patients taking dopaminergic medications. Impulse control disorders, including gambling, compulsive shopping, compulsive sexual behaviour and binge eating, occur in about 17%.

After initial treatment with levodopa, patients with Parkinson’s disease experience a so-called honeymoon phase, in which therapeutic benefits are observed without major side effects. In levodopa-treated patients, 80% will develop involuntary movements after 4-6 years and 90% will have the problem after ten years.

Dopaminergic medications can influence cognitive processes, such as learning from feedback. They may increase learning from positive feedback, or rewards, and impair learning from negative feedback, or losses.

The susceptibility of patients with Parkinson’s disease to impulse control disorders may be due to a pre-existing biological predisposition towards addiction. Deep brain stimulation of the subthalamic nucleus allows for the withdrawal of dopaminergic medications, but is associated with new-onset apathy.

Understanding the mechanisms underlying impulse control disorders and dyskinesias could provide crucial insights into other behavioural symptoms in Parkinson’s disease and addictions in the general population.


Helping older women manage changes in their sexual health

With increased life expectancy women can expect to live one third of their life past-menopause, when many older women say that sexual activity is still an important part of their relationship.

Reduction in systemic oestrogen can lead to the vagina becoming shorter and drier, with a reduction in vaginal secretions. This may make penetration painful, but can be helped with artificial lubricants.

Older women are at increased risk of sexually transmitted diseases because dryness in the vagina can lead to micro-abrasions. They are also at increased risk of some cancers, including breast cancer. Screening continues until the age of 65, but the highest rate of incidence is in women over 85 so it is important that women continue to examine their breasts.

Screening for human immunodeficiency virus should be considered for women with recurrent pneumonia, shingles or tuberculosis.

Many older people would like to discuss sexual concerns with nurses, but are embarrassed to do so. However, the permission, limited information, specific suggestions, and intensive therapy (PLISSIT) model can be helpful. Nurses using the PLISSIT model can give permission by asking cue questions, such as ‘many women feel that the menopause affects their intimate relationships. Is there anything you would like to ask me about this?’ The second step, limited information, can involve providing leaflets and later checking whether they were helpful. The last two stages of the model require referral to a specialist.