

Skin bank eases suffering for burn victims

When it comes to burns, the famous words of Francis Bacon - "the remedy is worse the disease" - ring true.



The Centre of Tissue Engineering has launched a skin bank for the treatment of burn wounds

The difficulty with burns is the fact that when skin is burnt off, the victim is exposed to the harshness of the environment - doomed to dehydration and open to all kind of infectious bacteria.

Therefore the burn wound has to be covered up, but with synthetic applications, the dressings have to be changed every two to three days, which is often more painful than the healing wound itself. Each time this means more trauma the patient and newly formed cells are lost.

Human skin provides the best solution

The best solution to this problem is cadaveric human skin. Only a few strips from the very top layer of skin can be procured from the arms, legs and back of organ and tissue donors and then be used very effectively on burn victims. Skin has to be procured from the donor body within 24–36 hours after death.

Skin banking service

So it's hardly surprising that over the past five years, the Centre for Tissue Engineering (CTE) at the Tshwane University of Technology has consistently been approached by a number of transplant coordinators and burn units around the country to see if there is a way in which human skin can be made available for the treatment of burn victims.

The recommended cryo-preservation method to store skin for later use is extremely expensive – especially in its start-up phase. For this reason the CTE has chosen to make use of glycerol preservation: After the actual retrieval of the skin, it goes through a few steps in the laboratory and then into the glycerol which can preserve it for up to two years.

The body is fooled into thinking the skin is its own

Once applied to the patient, it can be left on the wound for up to two weeks. Recognising the skin as human, the patient's body is fooled into believing that it is his own skin – the wound calms down and the skin cells can now focus on regenerating and healing itself. After the two weeks, the donor skin dries out and spontaneously detaches from the wound –

much like a scab - making its removal easy. The wound can now be assessed and treatment repeated if needed.

Burns are SA's sad legacy

Thanks largely to socioeconomic circumstances, shack fires and even veld fires in rural areas cause the death of many people – especially children – in South Africa every year. These deaths occur, not only because of the severity of the burns, but because there are no effective, affordable synthetic treatment options available to patients.

It is estimated that 11% of all unnatural deaths in SA are directly linked to burn wounds. Every month about 268 patients are treated for serious burns, of which 161 are children.

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