New biodegradable wound dressing developed

August 15 2019

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Scientists have developed a new biodegradable wound dressing that can speed up healing and is made from all-natural materials.

Researcher Abhishek Gupta, of the University of Wolverhampton's School of Pharmacy, developed the new innovative dressings.

He said they would provide an alternative to conventional gauze, which could be particularly beneficial for immunocompromized patients such as HIV patients, diabetics and the elderly. They can be used for dry or exudative wounds as they are capable of creating a moist microclimate at the wound site which facilitates healing.

"Our hydrogel dressings are ultra-pure and biosynthetic. As well as the additional healing properties, they are biodegradable, so are an environmentally friendly alternative to conventional dressings," he said. "Chronic wounds impose an immense socio-economic burden, and if they fail to respond to the available medical interventions, may lead to amputation. Although there is a plethora of proprietary wound dressing products already available on the market, due to the increase in the aging population and incidences of chronic diseases, there is a critical need to continue to develop improved advanced wound dressings.

"Our development could have a positive impact on the use and disposal of wound dressings in the future."

The hydrogel wound dressings, when loaded with silver (silver zeolites), exhibited prolonged antimicrobial properties and are capable of providing additional protection.

Abhishek used curcumin as a healing agent for the hydrogel dressings with the aim of achieving faster recovery for chronic wounds. Curcumin is an active compound of turmeric with powerful antimicrobial, anti-oxidant and anti-inflammatory properties. All these properties are beneficial in facilitating healing of chronic wounds.

Extensive testing has shown the dressings to kill bacteria, with no

damage to blood cells and with strong antioxidant properties. It is also thermally stable and does not lose its properties when autoclaved for sterilization purposes.

Provided by University of Wolverhampton