

Pressure ulcer management in disasters in low-resourced countries

We read with interest the article by Sato and Ichioka¹ on pressure ulcer occurrence following the great East Japan Earthquake. Because research on pressure ulcers (PU) in disasters is limited, we wanted to share our experience with PU in spinal cord injury (SCI) patients in the 2005 Pakistan earthquake.

SCI is an established risk factor for development of PU. The 2005 Pakistan earthquake resulted in hundreds of acute SCI for which our healthcare system neither had resources nor adequate expertise.² Evacuation priority from the disaster zone was given to persons with open wounds and broken bones, delaying evacuation of SCI patients in many cases.³ There was only one spinal rehabilitation unit in the country; patients had to be managed in makeshift paraplegic centers.³ At that time and even today, there are no trained rehabilitation or skin care nurses in Pakistan.⁴ PU risk assessment and monitoring is not routinely performed or documented. The attitude of our healthcare professionals (HCPs) toward pressure ulcer recognition and prevention has been described as casual⁵ and further complicated by the fact that Pakistan was/is a low-resourced developing country with an inadequate healthcare infrastructure.

Our team was at the forefront of management and rehabilitation of SCI patients. PU prevention and management was a major concern. The reported incidence of PU in SCI ranged from 20% to 28.9% in the first 3 months after the disaster. Most of the PUs were classified as Grade I and II.⁶ The possible etiological factors identified were lack of physician knowledge regarding pressure ulcer prevention, inadequate change of posture, nonavailability of pressure-relief mattresses in the acute phase of management, and delay in identification of early signs of skin breakdown.² An important observation was reduced incidence of PU and other SCI-related complications in patients under physiatrist care.^{2,7} This was due to early identification of skin breakdown, better patient evaluation, and early initiation of position change protocols.

Despite the lack of trained healthcare professionals, the incidence of grade III and IV PU was relatively low in SCI patients in the 2005 disaster. In the absence of skin care nurses and awareness of Pakistani HCP toward PU prevention, the physiatrists played a major role in preventing PU and providing patient education. Physical Medicine and Rehabilitation residents were assigned to different makeshift paraplegic centers and regularly

inspected the pressure areas and conducted training sessions for the caregivers.

Another factor was the presence of large number of caregivers and relatives trained in regular change of posture and inspection of pressure areas. This can be a cost effective and useful intervention that doesn't require any specific expertise and can be taught in a few live demonstrations, even to illiterate attendants in a low-resourced setting, as was the case in the 2005 earthquake.

Evidence is growing that early medical rehabilitation in disasters results in reduced complications and better functional outcomes for major and minor disabilities.⁸⁻¹⁰ In a low-resourced setting such as Pakistan, where all members of a rehabilitation team are not present, physiatrists are invaluable in detecting and preventing PU as wound care specialists.

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Reply

The 2011 Great East Japan Earthquake and the 2005 Pakistan earthquake posed similar problems: limited resources, manpower shortage, and lack of knowledge regarding the prevention and treatment of pressure ulcers.

Medical relief work is provided by multidisciplinary specialists from various backgrounds. A relatively small percentage of healthcare professionals has extensive knowledge and experience in PU management, making it necessary to share these skills and knowledge among the medical team.

Disaster relief work has to be accomplished with the limited manpower available. Adequate PU management is difficult to achieve despite the best possible efforts of healthcare professionals. Caregiver help is indispensable to identify and resolve problems regarding PU. Educating these caregivers through live demonstrations and simple illustrated manuals could be a reasonable and useful approach.

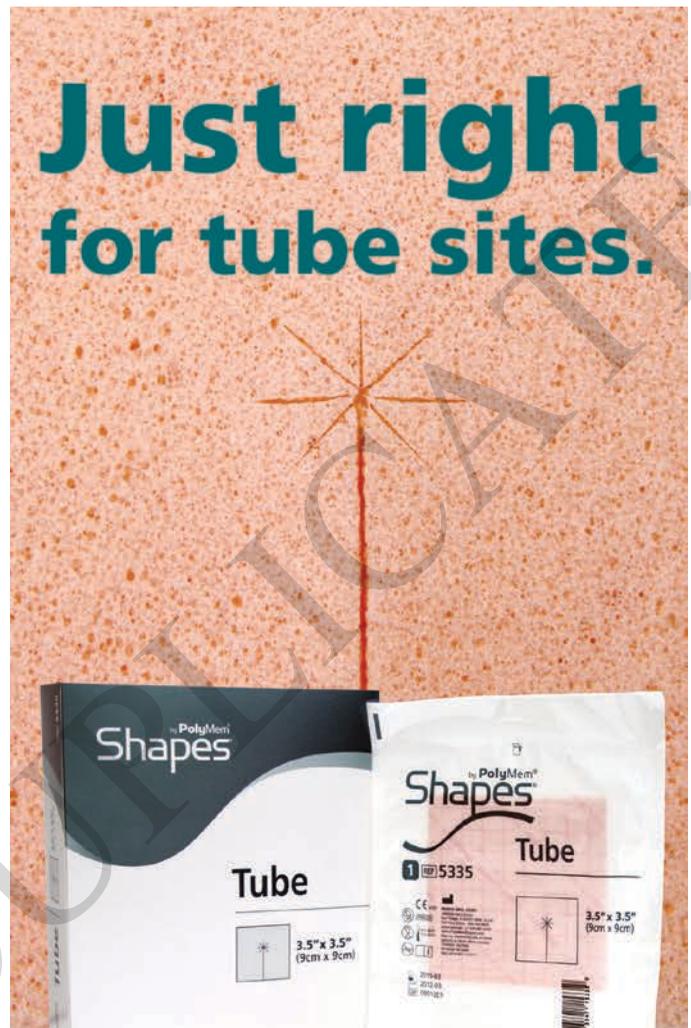
Physiatrists also can play a prominent role in PU prevention. In addition, early rehabilitation is desirable not only for SCI patients, but also for the elderly in evacuation shelters. In the 2011 Japan earthquake, 30% of the elderly in evacuation shelters were estimated to be at risk or had already developed immobilization syndrome secondary to the inactive and very restricted lifestyle in the shelters.¹ Thus, an urgent need exists for the management of patients developing immobilization syndrome and the prevention of new cases. [n](#)

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