

Ulcer classification systems: How they can help us



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In the field of diabetic medicine, there are as many different opinions on foot ulcer classification systems as there are systems to select from. Primarily, though, there are two main types of classification systems that are used: the risk category classification for the development of a foot ulcer; and the ulcer classification system that describes the staging and severity of the wound (Schaper, 2004).

Despite the number of variations available, many clinicians have been reluctant to use classification systems on a regular basis. This reluctance may impact on clinical management and organisation, communication between healthcare practitioners, and clinical audit. Importantly, the much-required evidence of efficacy of intervention therapies and other research projects will remain elusive without their use.

There are many eminent authors of ulcer classification systems who have made significant contributions to the research literature and have had their systems evaluated to demonstrate their usefulness (Wagner, 1987; Armstrong et al, 1998; Macfarlane and Jeffcoate, 1999). Despite this evidence, perceived wisdom suggests that their use is not as widespread as it could be.

Perhaps we need to re-visit some of the issues, particularly in light of clinical governance and the increasingly litigious society that we find ourselves in.

Benefits of classification systems

It has been suggested that the use of an ulcer classification system can aid in the management of wounds, and there is evidence to support this claim (Frykberg, 2002). The experienced practitioner may feel that the use of an ulcer classification system may not contribute significantly to the clinical decision-making and may fail to appreciate its role in the facilitation of clinical audit.

To prevent complaints from escalating to litigation, medical records have to be accurate and there are often poor

subjective descriptions of ulcers that are subject to scrutiny by clinical experts and members of the legal profession. The use of an agreed classification system may help to achieve consistency. This may be a convincing enough reason for clinicians to adopt a classification system into regular clinical practice.

Audit is an increasingly important part of NHS practice as a governance issue. Where the use of a classification system in clinical management is particularly useful, I feel, is in helping with the identification of the healing potential of a wound and the comparing of results of a particular foot ulcer service with those from other services across the UK.

Overcoming ambiguity?

Perhaps the lack of a completely unambiguous system provides an explanation for the reticence surrounding their use. Younes and Albsoul (2004) stated that:

'The basic problem inherent to any classification system for any disease is that the ease of its application is inversely related to its clinical accuracy.'

Despite the vagaries of such systems, without their use how can we measure and compare clinical outcomes of our practice? Clinical data can be audited without the use of classification systems, but it can be a tedious, painstaking practice to determine the presence of all the aetiological factors that have contributed to the ulcer. If a validated classification is used on a regular basis then it would be easier to perform an audit in the first place.

Evolution of classification systems

Wagner system

In the past, the most universally referenced foot ulcer classification system was the Wagner system (Wagner, 1987). This system described the natural history of the dysvascular foot, and lesions could be classified as they improved or deteriorated.

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San Antonio system and University of Texas Wound Classification System

With the increasing knowledge and interest in the pathogenesis of the diabetic foot ulcer, there has been a requirement for a system to account for stages in severity of ischaemia and infection. Researchers known as ‘the San Antonio group’ (because of their location) validated a system that has much merit and has been used in research (Lavery et al, 1996). Their system primarily stages and grades the wounds according to depth of tissue involvement, ischaemia and infection. The group evaluated 360 medical records and their results demonstrated that outcomes deteriorated with increasing grade and stage of wounds with the use of another system, the University of Texas Wound Classification System (Armstrong et al, 1998).

S(AD) SAD and PEDIS systems

In a previous issue of this journal, Rosamund Macfarlane and William Jeffcoate wrote a very persuasive article on the use of classification systems and described their own system: the Skin (Area and Depth), Sepsis, Arteriopathy, Denervation (S[AD] SAD) system (Macfarlane and Jeffcoate, 1999). This system expands on the San Antonio system in a quite significant fashion. It incorporates five key factors, as described in its full title. The inclusion of neuropathy was a much-welcomed addition to previous systems, and the S(AD) SAD system also includes the enigma that is the Charcot foot. This system is intended as an aid to audit and research. It is relatively straightforward and includes a four-point scale of severity attached to all five components.

The S(AD) SAD system has been subsequently validated, which has produced some very interesting data. The Nottingham-based group that developed the system carried out a prospective study of 300 people with ulcers who had been newly referred to a hospital-based multidisciplinary clinic. Their outcome data showed that with the use of the

system, the key factors of area, depth and arteriopathy contributed independently to a model to predict outcome (Treece et al, 2004).

The International Working Group on the Diabetic Foot (IWGDF) has also developed a classification system for research purposes, which has prompted much interest (Schaper 2004). The Perfusion, Extent/size, Depth/tissue loss, Infection and Sensation (PEDIS) system includes the parameters listed in its title. It is anticipated that this system will be used on a worldwide basis for the purpose of enhanced communication and enable the comparison of the results of different research projects.

The S(AD) SAD and PEDIS systems have the same key factors for classification purposes but differ slightly with the grading systems. Both groups (Macfarlane and colleagues, and the IWGDF) acknowledge the difficulties with assessment of perfusion and assessment of infection, with particular reference to the diagnosis of osteomyelitis (Macfarlane and Jeffcoate, 1999; Schaper, 2004). Both systems were designed for scientific purposes.

Other systems

There are several other classification systems that warrant a mention. One is the excellent staging system from Edmonds and Foster (2005). Another is the relatively new DEPA scoring system (based on the depth of the ulcer [D], the extent of bacterial colonisation [E], the phase of ulcer healing [P] and the associated underlying aetiology [A]; Younes and Albsoul, 2004), which is a validated system based on a points score. The points are accrued by the severity of the lesion; they may aid in the selected treatment regimens and are indicative for prognosis. These systems have their merit, but they possibly add to the confusion!

Validation

The ‘proof of the pudding’ will be in the popularity of any one system, depending on the intended purpose. Inevitably ease of use will be a powerful determinant

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combined with the validity of the system. Validation involves face validity in terms of content (this may be consensus by experts) and reproducibility (low intra- and inter-observer variability). For those systems that are used to predict outcomes or aid in the selection of treatments, prospective data will be required.

Concluding remarks

All clinicians involved with the treatment of foot ulcers should consider the use of a classification system. Teams need to involve all key personnel in the selection of the system and what they wish to achieve. There may not be a universal classification system that meets all our needs, but there are systems to select for the different processes of audit, research and clinical management. Teams need to consider the frequency of classifying the ulcer, the validity of the selected system and the training requirements of all healthcare practitioners involved. ■

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