

Skin tears. A quantitative study on the phenomenon and proposal for a prevention and management procedure

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ABSTRACT

The study aims to understand whether healthcare professionals, nurses and hospital aides know skin tears and how to recognize, prevent and manage them. In addition, it seeks to understand if there is a need for an instrument that supports operators in recognizing these lesions. The last aim is to propose a procedure for the prevention and management of skin tears. Existing literature on the issue has been reviewed and a quantitative study was conducted on skin tears by administering a questionnaire of 18 questions to nurses and hospital aides. Nurses and hospital aides are confused as regards the management of skin tears and need a tool to guide them in healthcare. A procedure for the prevention and management of skin tears is proposed.

INTRODUCTION

According to Payne and Martin,¹ Carville *et al.*² and LeBlanc *et al.*,³ skin tears are a lesion caused by shear forces, friction and/or blunt bodies, causing the separation of skin layers. They may be: i) Partial thickness: with separation of the epidermis from the dermis; ii) Full thickness: with the separation of the epidermis and dermis from the underlying structures.

Those most affected are people: i) Of very young or old age (infants and the elderly); ii) In critical conditions or who are clinically compromised; iii) Requiring assistance for their personal care (ICU, major surgery, or traumatology patients).

Risk factors

The factors that may contribute to the onset of a skin tear are: age; sex (female); race (Caucasian); dehydration; malnutrition; cognitive impairment; altered mobility; impaired vision; neuropathies; long-term therapy with corticosteroids; prior history of skin tear; stiff limbs and spasticity; blood samples; combination therapy; presence of bruising; dependence in activities of daily living (ADL); use of assistive devices; taking socks on and off; removing plasters and dressings; vascular issues; heart issues; lung issues; transfers and falls; prosthetic devices; continence/incontinence; skin cleansers.

Prevention

The literature^{4,5} suggests that it is possible to reduce the incidence of skin tears by at least 50% through the implementation of specific protocols and staff training, which is the crucial aspect for the prevention of skin tears: all caregivers should know but especially apply some simple and common strategies. The best known strategies are LeBlanc *et al.*⁶

The classification of skin tears

Today, there is no universally accepted and properly validated classification system for the assessment of skin tears in the literature, although the literature often shows an increasing use of the classification made in 1980 by Payne and Martin, later revised in 1993 (Table 1).⁷

Another classification that is used for guidance in the classification of skin tears is the one developed in 2006 in Australia: the STAR (Skin Tear Audit Research) Classification System² (Table 2).⁷

These two classification systems, though apparently very similar, distinguish skin tears based on different factors: the first classification (Payne and Martin) is based on

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the extent of tissue loss; the second (STAR Classification System), instead, on the quality of the edges and skin flap.

At any rate, regardless of the system used, it is not correct - though this is often the case - to classify skin tears using the staging systems for pressure ulcers.^{1,5}

Treatment

The first step to develop a treatment plan for skin tears is to complete the wound assessment.⁸

The steps in treating a skin tear recognized in the literature are: i) Cleansing: removing bacteria, debris and/or any necrotic tissue present; ii) Healing in a damp environment; iii) Selection of dressings: Following the indications of RNAO⁹ on the use of a good dressing. In the case of skin tears, the literature features several studies and indications. Sutton and Pritty¹⁰ on the use of steri strips instead of the sutures or staples due to fragile skin; Nazarko¹¹ on the application of calcium alginate to control post-injury bleeding; LeBlanc and Christensen¹² on the use of transparent absorbent acrylic dressings. iv) Management of the cutaneous flap; v) Management of oedema; vi) Pain management; vii) Management of infection: with the prevention and, if present, the application of topical antimicrobials and/or systemic antibiotics; viii) Dressings to avoid: hydro-

colloids and transparent films. They may cause epidermal stripping and interfere with the healing of skin tears, if they are not removed accordingly.

Objectives

The study set the following objectives: i) Understanding whether there are patients at risk of skin tear in the studied healthcare settings; ii) Understanding whether nurses and hospital aides know how to correctly manage skin tears; iii) Understanding whether, for respondents, there is the need for a specific instrument to prevent and deal with this type of lesion; iv) Creating a proposed procedure for the prevention and management of skin tears.

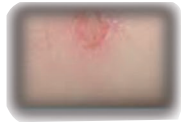




MATERIALS AND METHODS

The quantitative research started in February 2014, with the development of an 18-question questionnaire. The questionnaire was administered both to nurses and hospital aides.

The operating units to which the test was distributed were those present at the hospital and the local health care clinics.

Specifically: i) Intensive Care Unit; ii) Emergency Care Unit; iii) Surgery and Urology Unit; iv) Or-

Table 1. Payne and Martin classification. Reproduced with permission from Stephen Haynes *et al.* (2011).⁷

| | | |
|---------------------|--|---|
| CATEGORY IA | Linear skin tear with separated epidermis and dermis, without tissue loss. |  |
| CATEGORY IB | The epidermal flap completely covers the dermis within one millimetre of the wound margin. |  |
| CATEGORY IIA | Scant tissue loss < 25% of the lost epidermal flap. |  |
| CATEGORY IIB | Tissue loss > 25 % of the lost epidermal flap. |  |
| CATEGORY III | Complete tissue loss. The epidermal flap is absent. |  |

thopaedics Unit; v) Psychiatry Unit; vi) Medicine B Unit; vii) Medicine C Unit; viii) Bronchopneumology Unit; ix) Neurology Unit; x) Cardiology Unit; xi) Integrated Home Care (ADI); xii) Oncology Home Care (ADI); xiii) Nursing Home Care (RSA) No. 1; xiv) Nursing Home Care (RSA) No. 2.

The Units which were excluded from the study were: i) All the outpatient clinics; ii) Gynaecology and Obstetrics Unit; iii) Paediatrics and Neonatal Pathology Unit.

The paediatrics/neonatal pathology and gynaecology units, though having a patient at risk of skin tears (as reported by scientific studies), were excluded from the quantitative research, as we chose to place greater attention on the elderly patient who belongs to an increasingly growing population present at the hospital and local clinics.

After processing the survey instrument, the questionnaire was administered. The tests were distributed over two days. Recipients of the study were given about a month of time to complete the test.

Specifically, 89% were filled out by nurses and 11% by hospital aides (Figure 2).

The analysis of the results was done for all operating

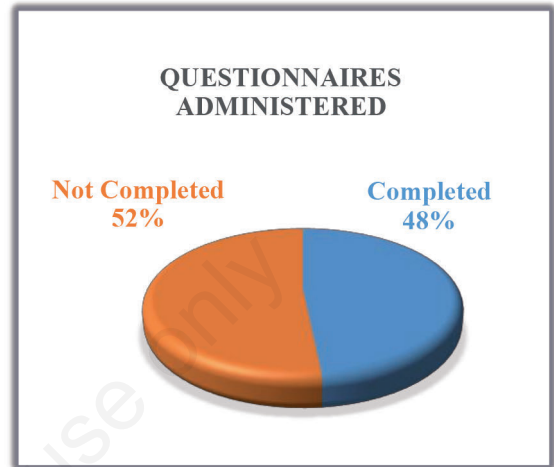




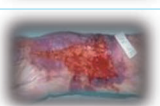


Figure 1. Percentual questionnaire compiled and not compiled by the study group.

RESULTS

One month after the distribution of the 239 administered tests, 113 were completed and 126 were not (Figure 1).

Table 2. STAR classification system (2007). Reproduced with permission from Stephen Haynes *et al.* (2011).⁷

| | | |
|---------------------|---|---|
| CATEGORY IA | A skin tear where the edges can be realigned to the normal anatomical position and the skin or flap colour is not pale, dusky or darkened. |  |
| CATEGORY IB | A skin tear where the edges can be realigned to the normal anatomical position and the skin or flap colour is pale, dusky or darkened. |  |
| CATEGORY IIA | A skin tear where the edges cannot be realigned to the normal anatomical position and the skin or flap colour is not pale, dusky or darkened. |  |
| CATEGORY IIB | A skin tear where the edges cannot be realigned to the normal anatomical position and the skin or flap colour is pale, dusky or darkened. |  |
| CATEGORY III | A skin tear where the skin flap is completely absent. |  |

units involved in the study. The overall view of the collected data follows below.

The question shows the degree of participation of the professionals involved in the study: 89% of nurses and 11% of hospital aides. While the participation of hospital aides was low, that of the nursing staff was: good, as regards the ICU, Emergency, Neurology and two home care units (A.D.I. and A.D.O.); fair for the surgical areas (Surgery - Urology and Orthopaedics) and Psychiatry and, finally, minimal as regards the hospital and local medical areas (Medicine B and C, Bronchopneumology, Cardiology, Nursing Home Care 1 and 2), where the probability of having patients with this type of lesion is actually much higher.

Moderate interest (89% of respondents) in the prevention and management of cutaneous alterations of the upper and/or lower limbs and therefore also in skin tears.

From question 3 to 9 (included), the collected data show that the probability of having patients with skin tears is very high. In fact: 94% is affected by multiple pathologies; in 92% of cases, normal cutaneous trophism is altered (with a frequency of 20%); about 90% of patients has a nutritional deficit, although the frequency of its being identified is still low in most cases (about 20%); around 88% shows states of psychomotor agitation (especially the patients in critical areas, Cardiology, Neurology, Bronchopneumology, Medicine B and C, Orthopaedics and Nursing Home Care 1); about 61% of patients is aged between 70 and 85 years.

Then, question No.10 shows that skin tears are identified *often* by 56% of respondents and *seldom* for the remaining 41% (Figure 3).

Question No. 11 shows that the frequency to document this type of lesion varies. In question No. 12, 75% of nurses and hospital aides admit to treat skin tears following the hospital protocol (*i.e.*, a standardised indication for the prevention and management of pressure ulcers), while only 23% of respondents stated to act according to their professional knowledge (Figures 4 and 5).

About 85% of the respondents identify prevention as a fundamental process applicable in their work routine in order to prevent the onset of skin tears. Degeneration, instead, is considered a rare occurrence.

In question No.17, almost all the nurses and aides (97%) agree in saying that the presence of any skin lesion, even of an acute wound like skin tear, if present, can negatively affect the mental and physical well-being of a patient.

Finally, in the last question 94% of nurses and aides stated that they need a more specific indication for the prevention and treatment of skin tears (Figure 6).

Therefore, concluding this analysis, we can say that the aims at the beginning of this quantitative study have all been achieved: i) The relevance of patients at risk of skin tears in the clinical and local facilities of the hospital examined; ii) The presence of widespread *confusion* about the

management of skin tears, thus confirming LeBlanc's findings in the literature;³ iii) The need to have a tool that helps healthcare professionals to prevent and manage skin tears.

Limits of the study

The first limit encountered was in the use of the term skin tear in question No. 10. It was decided not to use this term, but synonyms, to avoid possible consultations of the web that would alter the veracity of the test.

The second limit was the participation of the candidates in the study: more than half of the tests were not completed.



Figure 2. Percentage of nurses and aides who participated in the study.

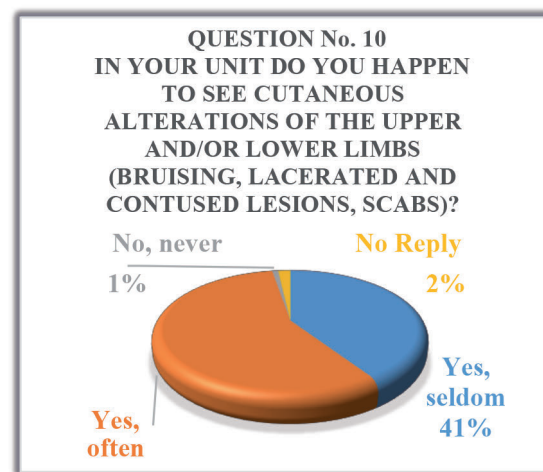


Figure 3. Frequency of detection of skin tears by the study group.

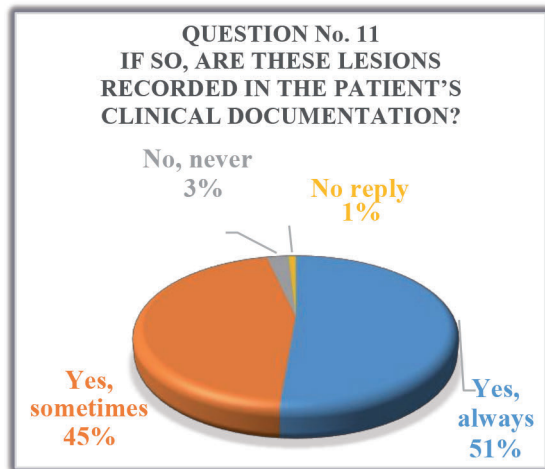


Figure 4. Frequency of skin tears recording in clinical documentation.

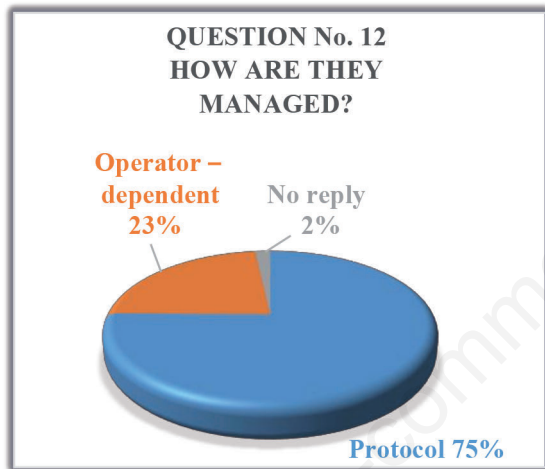


Figure 5. Percentage on how to treat skin tears.

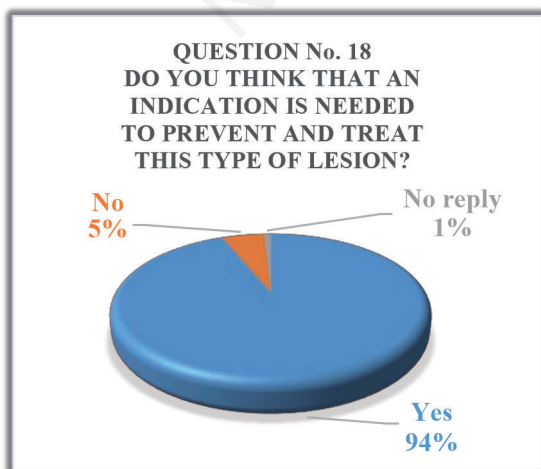


Figure 6. Percentage of those who consider it necessary an indication for the prevention and management of skin tears.

Finally, the *confusion* found with regard to the difference between prevention and treatment of a pressure ulcer and a skin tear.

CONCLUSIONS

At the end of this quantitative study, it can be concluded that skin tears are *known* but not fully understood acute lesions where there is still much to discover and improve, especially as regards the clinical management and training of healthcare personnel.

Hence the idea of wanting to propose a procedure that can help, through the use of certain instruments (Figures 7, 8^{3,5}) to prevent, recognize, manage and document this type of acute wound.

The procedure consists of 6 indicators and assigns different responsibilities to nurses, hospital aids, nutritionists, general practitioners and to caregivers and/or patients (depending on the patient's level degree of self-sufficiency).

We recommend 4 scales, already known in the literature, to assess risk: MMSE, ADL, MNA, VRS, NRS and PBS.

As regards the treatment of skin tears, reference is made to the current state of knowledge in the literature and in clinical practice.

Finally, a draft sheet for the assessment and management of the wound has been created to gather information on healthcare professionals' work (Figures 9, 10).



Figure 7. Skin tear classification tool. Reproduced with permission from Stephen Haynes *et al.* (2011).⁷

| RISK FACTORS OF SKIN TEARS | HOW TO PREVENT SKIN TEARS |
|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> AGE > 65 YEARS <input type="checkbox"/> PRIOR HISTORY OF SKIN TEARS <input type="checkbox"/> CARDIO-RESPIRATORY DISEASES <input type="checkbox"/> METABOLIC DISEASES <input type="checkbox"/> NEUROPATHIES <input type="checkbox"/> COGNITIVE DEFICITS (MMSE) <input type="checkbox"/> MALNUTRITION (MNA) <input type="checkbox"/> DEHYDRATION <input type="checkbox"/> ALTERED CUTANEOUS TROPHISM <input type="checkbox"/> FAECAL AND/OR URINARY INCONTINENCE <input type="checkbox"/> ALTERED DEGREE OF AUTONOMY (ADL) <input type="checkbox"/> PSYCHOMOTOR AGITATION <input type="checkbox"/> USE OF ASSISTIVE DEVICES FOR MOBILISATION <input type="checkbox"/> PROLONGED THERAPY WITH CORTICOSTEROIDS | <ol style="list-style-type: none"> 1. ENSURE A SAFE ENVIRONMENT: <ul style="list-style-type: none"> • ADEQUATE LIGHTING • REMOVE OBSTACLES TO WALKING • PAD ANY EDGES OF FURNITURE OR OTHER OBJECTS 2. PAD THE FOOTREST OF WHEELCHAIRS 3. THOROUGH PERSONAL HYGIENE 4. WEAR CLOTHES WITH LONG SLEEVES AND LONG TROUSERS AND COMFORTABLE SHOES 5. REMOVE OBJECTS SUCH AS RINGS, WATCHES 6. MOISTURISE SKIN WITH EMOLLIENT LOTIONS OR ALMOND OIL TWICE A DAY 7. HELP MOBILISATION WITH SPECIFIC AIDS <p style="text-align: right; font-size: small;">Created by Otilia Costelero</p> |

Figure 8. Skin tear prevention tool. Reproduced with permission from LeBlanc *et al.* (2008).³ Reproduced with permission from Caula *et al.* (2011).⁵

| • OPERATING UNIT | | • R.S.A. | | | | • HOME CARE | | | |
|---------------------------|--|-------------------|--|--------------|--|-------------|--|--|--|
| PATIENT NAME AND SURNAME: | | | | | | | | | |
| DATE: | | | | | | | | | |
| SKIN TEAR CATEGORY: | | | | | | | | | |
| SITE: | | | | | | | | | |
| MEASURES (mm) | | Length | | | | | | | |
| | | Width | | | | | | | |
| | | Depth | | | | | | | |
| FLAP | | Present and vital | | | | | | | |
| | | Absent | | | | | | | |
| BOTTOM OF THE WOUND | | Green | | | | | | | |
| | | Black | | | | | | | |
| | | Yellow | | | | | | | |
| | | Red | | | | | | | |
| | | Pink | | | | | | | |
| SKIN AROUND THE WOUND | | Intact | | | | | | | |
| | | Irritated | | | | | | | |
| | | Xerotic (dry) | | | | | | | |
| | | Macerated | | | | | | | |
| EXUDATE | | QUANTITY | | Scarce | | | | | |
| | | | | Moderate | | | | | |
| | | | | Abundant | | | | | |
| | | | | Serous | | | | | |
| | | | | Haemorrhagic | | | | | |
| | | | | Purulent | | | | | |
| | | TYPE | | | | | | | |
| INFECTION | | Yes | | | | | | | |
| | | No | | | | | | | |
| PAIN | | VAS | | | | | | | |
| | | BPS | | | | | | | |
| | | Yes (see annex) | | | | | | | |
| | | No | | | | | | | |
| PHOTOS | | | | | | | | | |
| SIGNATURE OF EVALUATOR | | | | | | | | | |

Figure 9. Skin tear evaluation sheet.

| PATIENT NAME AND SURNAME: | | | | | | | | | |
|-------------------------------------|--|------------------------------------|--|--|--|--|--|--|--|
| DATE: | | | | | | | | | |
| CLEANSING | | Saline solution | | | | | | | |
| | | Ringer's solution | | | | | | | |
| | | Antiseptic solution (Povidone) | | | | | | | |
| REMOVING THE FIBRINCLE | | Yes | | | | | | | |
| | | No | | | | | | | |
| CARE OF MARGINS | | Skin glue | | | | | | | |
| | | SteriStrip | | | | | | | |
| DEBRIDEMENT | | Surgical | | | | | | | |
| | | Autolytic | | | | | | | |
| | | Enzymatic | | | | | | | |
| | | Non adhesive | | | | | | | |
| PRIMARY DRESSINGS | | Silicone | | | | | | | |
| | | Transparent acrylic | | | | | | | |
| | | Non-adhesive with antiseptic | | | | | | | |
| | | Alginate | | | | | | | |
| | | Hydrocolloid | | | | | | | |
| | | Hydrocolloid with antiseptic agent | | | | | | | |
| SECONDARY DRESSINGS | | Polyurethane foam | | | | | | | |
| | | Polyurethane foam with padding | | | | | | | |
| | | Gauzes | | | | | | | |
| CARE AROUND THE WOUND | | Emollient lotion | | | | | | | |
| | | Almond oil | | | | | | | |
| PROTECTION OF SKIN AROUND THE WOUND | | Cotton wool | | | | | | | |
| | | Cotton tubular bandage | | | | | | | |
| DRESSING FASTENING | | Cohesive bandage | | | | | | | |
| | | Tubular nets | | | | | | | |
| SIGNATURE | | | | | | | | | |

Created by Gisela Candeloro

Figure 10. Skin tear dressing table.

REFERENCES

1. Payne RL, Martin ML. The epidemiology and management of skin tears in older adults. *Ostomy Wound Manage* 1990;26:26-37.
2. Carville K, Lewin G, Newall N, et al. STAR: a consensus for skin tear classification. *Prim Intent* 2007;15:18-28.
3. LeBlanc K, Christensen D, Orstead H, Keast D. Best practice recommendations for the prevention and treatment of skin tears. *Wound Care Canada* 2008;1:14-30.
4. Ratliff CR, Fletcher KR. Skin Tears: a review of the evidence to support prevention and treatment. *Ostomy Wound Manage* 2007;53:32-40.
5. Caula C, Apostoli A. Cura e assistenza al paziente con ferite acute e ulcere croniche. *Manuale per l'infermiere*. Sant'Arcangelo di Romagna: Maggioli; 2011. pp 385-389.
6. LeBlanc K, Baranoski S. Skin Tears: state of the science: consensus statement for the prevention, prediction, assessment, and treatment of skin tears. *Adv Skin Wound Care* 2011;24:2-15.
7. Stephen Haynes J, Carville K: *Skin tears Made easy*, Wound International, 2011;2:1-6.
8. Le Blanc K, Baranosky S. Prevention and management of Skin Tears, *Adv Skin Wound Care* 2009;22:325-32.
9. Registered Nurses' Association Of Ontario (RNAO): *Nursing best practice guideline: risk assessment and prevention of pressure ulcers*. Toronto 2005.
10. Sutton R, Pritty P. Use of sutures or adhesive tapes for primary closure of pre-tibial lacerations. *Br Med J (Clin Res Ed)* 1985;290:1627.
11. Nazarko L. Preventing and treating skin tears, *Nurs Resident Care* 2005;7:549-50.
12. LeBlanc K, Christensen D. An approach to managing skin tears in the elderly population: a case series. Poster Presentation presented at the Canadian Association of Wound Care Annual Conference. Montreal, QC; 2005.