

Peristomal skin changes: therapeutic education on prevention and nursing interventions on management

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Abstract

Introduction: for the person with an ostomy it is very important to have intact peristomal skin, because there is a certainty that the ostomy pouching system adheres to the skin; on the other hand, with altered skin there is a greater risk that the ostomy pouching system detaches with consequent infiltration of the effluents and contact with the peristomal skin, showing skin alterations and further compromising the person's quality of life.

Materials and methods: the bibliographic research conducted on PubMed detecting 47 publications that answered to the 2 research questions, under 10 years, with a sample of more than 50 adult participants and in English language.

Results: to define therapeutic education strategies to prevent peristomal skin complications and the most appropriate nursing interventions and dressing to manage peristomal skin complications.

Conclusion: a preventive therapeutic education with detailed, simple, adequate information and perhaps supported by printed information leaflets regarding peristomal skin complications will be able to reduce the incidence of peristomal skin changes, because the person with an ostomy will be able to recognize early the signs and symptoms of altered skin and manage them at home, thanks to the guidelines provided by the specialist nurse. In addition, the specialist nurse can effectively put to good use the expertise acquired through the treatment of peristomal skin complications, preventing the patient from suffering further side effects and speeding up the healing process, which is the main goal.

Key words: Wound Care, Wound Management, Peristomal Skin Complications, Education, Nursing interventions, Dressing

Introduction

The stomated person is a person who, following surgery that led to the packaging of an ostomy, suffers both physical and psychological injury, leading to a change in their body image.

The person with a stoma may experience early or late complications depending on the time of onset. Complications negatively affect their quality of life. Preventive therapeutic education is fundamental to maintaining skin integrity: an essential and of the utmost importance requirement to proceed with the correct management, application and use of the stomal device, moreover, the acceptance of one's stoma will also depend a lot on this factor that will allow the resumption of normality¹.

Altered skin prevents the ability of the collection garrison to adhere, causing early detachment resulting in loss of fecal or urinary material, which damages the skin and, if left untreated, can develop into more serious problems^{1,2,3}.

The alteration of the peristomal skin results in a marked deterioration in the quality of life and autonomy in the person with stoma^{4,5}. It undermines the person's ability to adapt to the new living condition and the management of the stoma will be more difficult. This prevents the resumption of work activity and social life because the person will have the fear and anxiety that the event of plaque detachment, with consequent loss of effluents, will occur without warning and especially in unsuitable areas, causing embarrassment, isolation, up to depression, with consequent increase in health costs for the management of the stoma^{4,5,6}.

This is why the stoma therapist has a very important role in educating the person or caregiver to the stoma care to maintain the integrity of the peristomal skin, which will have to become the primary goal for the stomated person. Prevention is better than cure: skin changes are often underestimated or there is little specific information about this problem, so it will be essential to provide information in order to gain greater awareness in recognizing the signs and symptoms of peristomal skin changes (such as skin color, skin integrity, shape, distribution and size of irritation or maceration, pain or burning⁷) in order to better manage them and prevent more serious complications^{6, 8, 9, 10}.

In fact, in a study investigating the perception of people with a stoma about the information that is provided at the time of discharge, 83% show that they would have liked more information about skin

care, what peristomal skin changes are and how to treat them¹¹.

In addition, two studies show that 80% of people with stoma do not seek health care, as they cannot perceive the presence of a skin alteration around the stoma; this data therefore suggests the need for a better education and training on peristomal skin alterations^{2,7}.

The highest incidence of skin changes shows in people with an ileostomy, also due to the damaging nature of the feces emitted, and they exhibit a significantly reduced quality of life^{4,6,7}.

The goal of this literature review is to define what are the educational strategies to prevent peristomal skin alterations, since preventive education is an essential strategy, and to bring out management nursing interventions, with any dressings. This research objective was due to the lack of evidence literature on wound care applied to stomaterapy, in fact between the master in stoma therapy and wound care there is a combination between them that allows you to manage the peristomal skin in the best way, given the importance of skin integrity with the consequent application of the collection system. I would also like to bring out the new scientific evidence to treat peristomal skin in correspondence with the new reform on professional responsibility Law 24/2017 'Provisions on the safety of care and the assisted person, as well as on the professional responsibility of the professionals of the health professions', which tells us that the nurse must comply with the guidelines and clinical-care practices in the exercise of his activity.

Methods

To carry out the literature review, the main research questions were as follows:

> What are the most appropriate nursing interventions/medicines to manage peristomal skin changes?

Following is the formulation of the two PICOs:

POPULATION: stomaly patient

PROBLEM: skin changes

INTERVENTIONS: prevention strategies

COMPARISON: is not present

OUTCAME: management of skin changes.

POPULATION: stomaly patient

PROBLEM: skin changes

INTERVENTIONS: nursing interventions/medicines

COMPARISON: is not present

OUTCAME: management of skin changes.

The keywords used for the research are the following: medication, peristomal skin, ostomy, skin care peristomal, wound care, hydrocolloid dressing, wound management, treatment, alginate dressing, complication, hydrofibre dressing, chemical contamination dermatitis, allergic contact dermatitis, irritation, periwound skin, maceration, contamination dermatitis, prevention, skin diseases, skin changes, care, nursing, irritation, strategies, contact irritant dermatitis, dermatitis peristomal.

The search strings were built with the Boolean operator AND. The source of information was the PubMed database, research conducted from January 15, 2020 to September 30, 2020. The reviewed articles were selected according to these eligibility criteria: if they answered the 2 research questions, articles of 10 years (therefore from 2010), with a sample of more than 50 adult participants (excluding samples with children) and English language.

Results

the selection of the studies was made according to this flowchart below:

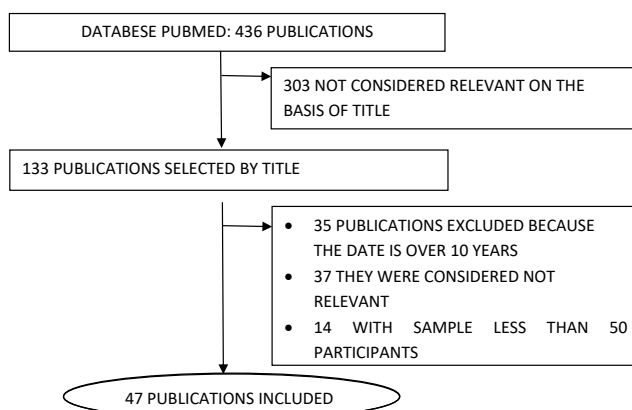


Figure 1.

The peristomal skin is that portion of skin that extends for about 10 cm around the stoma; it is a very important area, because the plaque of the collection system is adhered, for this reason it is essential to keep the skin rosy, dry, clean, intact, it must look like the skin on the opposite side of the abdomen without a stoma. Healthy peristomal skin without alterations is defined as the complete absence of any visible skin change in the peristomal area^{12,13,14}.

Risk factors for developing skin changes are: type and location of the stoma, effluent leaks, retraction, prolapse, mucocutaneous dehiscence, post-operative presence of hernia, body mass index (obesity BMI>40), chronic inflammatory bowel diseases (Crohn's disease or ulcerative colitis), complications of the laparotomic wound, emergency surgery, sex and age.

Peristomal skin changes are classified mainly on an etiological basis:

- chemical damage: contamination dermatitis, pseudo verrucous lesions, alkaline encrustations;
- mechanical damage: pressure ulcers, rubbing injuries, tear injuries, mucocutaneous separation;
- infectious: candida and folliculitis;
- immunological: allergic contact dermatitis;
- disease-related dermatitis: varicose veins, gangrenous pyoderma, malignancy;
- underlying skin diseases such as psoriasis and eczema^{1,3,9,13,15}.

Skin complications occur in patients with stoma between 6% and 80% depending on the type of ostomy and occur within 2-3 weeks of surgery^{1,3}.

It is essential that people with ostomy have intact skin to prevent leakage and avoid discomfort¹²,

but after surgery, the most common physical complication experienced by 77% of people is skin alteration, caused by plaques that do not fit the skin resulting in loss of effluents^{2,14}, affecting 1/3 of colostomies and more than 2/3 of urostomies and ileostomies¹⁴. In fact, skin changes vary according to the type of stoma: 48% in urostomies, 29% to 31% in colostomies and 5% to 70% in ileostomies. 42% of stomated people have dermatitis on chemical damage, the most common diagnosed ailments are erosion (33% of cases), maceration (20%) and erythema (16%)⁹.

In addition, the literature shows that peristomal skin complications develop in 27 out of 43 people after 21 - 40 days after the creation of the ostomy: 11 had infection (fungi or folliculitis); 8 skin erosions (excoriated, wet and bleeding skin), 7 erythema. 9 subjects developed more than one skin complication¹⁶.

After one month after surgery ¼ of people present irritation, 40% after 5 months present a painful or irritated peristomal skin, 33% after 12 months and 20% after 24 months; 76% of these people had problems for more than three months; in 62% it was caused by the leakage of feces or urine that came into contact with the skin (the cause was the hole too large), causing contact irritative dermatitis; in 20% they had mechanical lesions (potentially affected colostomies); 9% infections; it was found that more than half of ileostomies and urostomies and 1/3 Of colostomies had skin complications¹².

A retrospective study shows that in 168 people with ostomy the mean time elapsed from ostomy surgery to the first appearance of skin alteration was 23.7 ± 20.5 days, for colostomy 23.2 ± 20.8 days, for ileostomy 24.2 ± 21.1 days and for urostomy 22.0 ± 0.0 days. The incidence of peristomal skin changes over 1 year was higher for ileostomy (57%), followed by urostomy (48%) and colostomy (35%)⁶.

Most complications happen within the first 2 weeks after hospital discharge, mostly in ileostomies (60%). Excoriated skin is reported in 20% of ileal ducts, 29% of colostomies and 70% of ileostomies. The overall rates of skin problems were 25% (0-2 weeks), 40% (3-6 weeks), 20% (7-12 weeks and 3-6 months) and 15% (6-12 months)⁷.

In conclusion, from the review of the literature it is clear that the highest rate of early peristomal skin changes is chemical contamination dermatitis^{1,13}, up to 40% of people report an irritated peristomal skin, with prevalence rates between 25-59%⁵, in

62% of people following the infiltration of effluents on the skin, caused by the cutting of the plaque too large, it presents with erosion in 26% of cases^{3,10,15}, or in another study 14 subjects with skin irritation associated with moisture and caused pain, itching and redness¹⁶.

In addition, allergic contact dermatitis is another very represented alteration¹⁷.

The literature evidences that the people most at risk are the elderly, because of their skin thinning; the skin alteration that manifests itself most is the mechanical damage from stripping, manifesting skin tears (skin tears) that the ISTAP (the International Skin Tear The Advisory Panel) has classified their severity into 3 types: type 1 linear losses of skin flaps without loss of skin that can be repositioned so as to cover the wound bed, type 2 is characterized by partial loss of the skin so that the residual flap does not cover the entire base of the wound when Repositioned, type 3 total loss of the skin flap¹⁸.

The type of stoma most at risk of developing skin changes is ileostomy equal to 78% in the first 10 postoperative days and 20% of patients with ileostomy complain of skin excoriations^{15,16}.

A descriptive study analyses quality of life with skin complications, most turned to an enterotomist (33, 47.8%), but others did not seek help with their complications (24, 16.3%). People who sought help were generally satisfied with the help received (average satisfaction score 77.94 ± 24.71). Allergic contact dermatitis was the most reported peristomal complication. Irritating contact dermatitis negatively affected QdL and nearly half of the participants sought help from an enterostomist. The results of this study suggest that patients may benefit from increased education on peristomal complications and reporting of collection system-related skin changes¹⁹.

A prospective research project describes that, out of a sample of 89 patients, peristomal skin complications are 10% to 70%, of which 31 patients had chemical damage to the peristomal skin (irritating dermatitis), 5 mechanical lesions, 4 Candida infections, 1 allergic reaction and 1 gangrenous pyoderma²⁰.

So the stoma therapist must adopt planning strategies (critical component in the management of a patient undergoing surgery that requires the packaging of an ostomy) to prevent peristomal skin alterations, which are:

✓ the pre-operative design, to prevent





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- mispositioning;
 - ✓ the correct stoma care;
 - ✓ therapeutic education (which should coincide with the pre-operative design²¹): to gain greater awareness of the importance of intact skin, which allows the correct management, application and use of the collection device and to recognize the signs and symptoms of peristomal skin alterations in order to better manage them and prevent more serious complications. Healthcare professionals have many classification systems that allow the evaluation and management of peristomal lesions:
 - ✓ the Ostomy Skin Tool, through the DET^{22,23,24,25} score;
 - ✓ the classification system defined as S.A.C.S. (Peristomal Skin Disorders Study)²³;
 - ✓ PWAT (Bates-Jensen Wound Assessment Tool), a tool previously used for pressure injuries, today the literature states its use is also to document peristomal skin problems through photography and thus be able to monitor their evolution²⁶;
 - ✓ PLS (Peristomal lesion scale) new validated tool for peristomal skin assessment, focusing on patient demographics, clinical characteristics and classification of lesions by severity and topography. Created by AIOSS, AISLEC and the University of Padua, which introduces a new way of correctly interpreting and monitoring peristomal skin alterations, also reliable able to improve the quality of care and care of the stomata²⁷.



A literature review, to help health professionals in the management of skin changes, proposes the MINDS mnemonic model, which means: M- skin damage and mechanical skin stripping, Infection (bacterial or fungal), N- harmful chemicals and irritants such as feces or urine, D- skin diseases that are common in people with stoma, such as gangrenous pyoderma, psoriasis, S-skin allergens²⁸.

On the other hand, for the prevention and home care of peristomal skin changes in people with ostomy, in the international literature, it is clear that little information is given to the person about the importance of skin integrity and little information material that can support therapeutic education in the prevention of skin changes. Hence the importance of specialist health care by personnel with adequate knowledge and expertise in the field, as prevention, early identification and appropriate treatment of peristomal skin are essential for the care of the person with ostomy²⁹.

Discussion

SKIN PROBLEMS	EDUCATIONAL PREVENTION STRATEGIES
IRRITATIVE CONTACT DERMATITIS (CHEMICAL DERMATITIS FROM CONTAMINATION)	<p>- Use of plaques and barrier systems that are in close contact with the mucosa of the stoma in order to avoid as much as possible the contact of the enteric material with the adjacent skin, often provide a continuous adjustment due to the modification of the skin and abdominal wall in the post-operative course.</p> <p>-Wider plaques may be needed in cases of high-flow ostomy²⁹.</p>
MECHANICAL TRAUMA DERMATITIS (STRIPPING)	<p>- Use of protective wipes or sprays (barrier film) before applying the bag¹².</p> <p>-Use of silicone base adhesive remover wipes that help loosen the skin from the adhesive^{14, 28, 29}</p>
INFECTIOUS DERMATITIS: FOLLICULITIS	<p>-Correct cleaning of the peristomal skin before applying plaque, even with the use of an antibacterial soap.</p> <p>-Shaving the hair with an electric shaver or cut with scissors. Chemical hair removal with creams can be an alternative, but you need to be careful of skin irritation and allergic reactions^{28, 30}.</p>
INFECTIOUS DERMATITIS: FUNGAL RASH /CANDIDIASIS	<p>-Clean the peristomal skin with mild soap or possibly use antifungal solutions in selected cases, do not use antibacterials.</p> <p>-Dry very well by dabbing.</p> <p>-Apply powder that dries the skin^{1,3,29}.</p>
ALLERGIC CONTACT DERMATITIS	<p>Use of a collection system and/or alternative products with different chemical properties^{1,3,10,29,30,47}.</p>
MACERATION	<p>Correct modeling of the plaque on the ostomy to avoid contact of the fluid with the skin²⁹.</p>
DEPOSITION OF URIC ACID CRYSTALS (urostomies)	<p>-Removal with acetic acid solutions, applying light pressure during cleaning²⁹.</p> <p>-Use of convex plaque^{28,31}.</p> <p>-Sizing of the plate hole²⁸.</p>
<p>• USEFUL IN THE PREVENTION OF PERISTOMAL COMPLICATIONS IS THE USE OF ALOE VERA³².</p>	

SKIN PROBLEMS	NURSING INTERVENTIONS FOR MANAGEMENT
<p>IRRITATIVE CONTACT DERMATITIS (CHEMICAL DERMATITIS FROM CONTAMINATION)</p> 	<ul style="list-style-type: none"> - Protective powder based on pectin or sucralfate applied to the erythematous skin at each change of bag, which absorbs the exudate and promotes the adhesion of the plaque²⁹. -Protective films made of acrylate or silicone acting as a barrier^{12,28,33,47}. -Hydrocolloid plaque with hydrocolloid ring around the stoma that promotes wound healing and absorbs moisture from the stool or urine thus ensuring the adhesion of the plaque^{7,28,47}. -The scaling of the plate hole of the collection system by detecting with the meter the right size and, possibly, the use of the convex plate if the stoma is retracted^{7,12,47}. -If skin folds are present, they can be filled with paste that levels the skin under the plaque so that there is no stagnation of the effluent^{9,10,12,28,30,47}. -Moldable plaques that act as an excellent skin barrier with the aim of ensuring a secure seal around the everted stoma^{2,34}. -The use of plates composed with Manuka35 honey. -In cases of severe skin irritation, the application of steroids in spray to reduce the inflammatory process^{7,28,30}. -Possible use of zinc oxide powder that is insoluble to water²⁸. -For management, irrigation of the colostomy⁴⁷ can be considered as an alternative.
<p>MECHANICAL TRAUMA DERMATITIS (STRIPPING)</p> <p>IF SKIN TEARS OCCUR</p>	<ul style="list-style-type: none"> -2-piece system so that the plaque remains in place for 2-3 days and skin damage is avoided (in fact, 61% of the stomatized to avoid this problem use the 2 pieces compared to the one-piece). -Hydrocolloid powder to absorb exudate.²⁹ -Low adhesion dressing to be renewed every day (such as dressings with hyaluronic acid) or non-adhesive dressings on a silicone basis to be renewed every 7 days, in order to protect the skin flap from the hydrocolloid plaque which is high adhesive, after cleansing with NaCl 0.9% saline solution. -Using adhesive remover spray to remove plaque. -Remove the flap only if not viable, otherwise always conservative method by repositioning the flap (possible use of steri-strip)^{18,36}.
<p>INFECTIOUS DERMATITIS: FOLLICULITIS</p> 	<ul style="list-style-type: none"> -Application of ionized silver-based protective powder that absorbs moisture. -The topical use of alcohol-based clindamycin antibiotic. Systemic antibiotic therapy based on first-generation cephalosporins or cloxacillin may also be used³. -If exuding calcium alginate dressings with silver²⁸.
<p>INFECTIOUS DERMATITIS: FUNGAL RASH /CANDIDIASIS</p> 	<p>Possible both topical and systemic antibiotic therapy with topical fluconazole, nesstina or imidazole in powder form^{1,3,28,29}.</p>
<p>ALLERGIC CONTACT DERMATITIS</p> 	<ul style="list-style-type: none"> -Possible Patch Test using the product in other parts of the body with 24-hour control, after 48 hours, after 72 hours^{1,3,10,28,29,30,47}. - Topical or systemic use of cortisone products³¹.

<p>PSEUDOVERRUCOUS LESIONS</p> 	<ul style="list-style-type: none"> -Evaluate the size of the plate hole. -Recent onset: application of silver nitrate and finishing of the plate-bag system. -Present for a long time, therefore hard and dry lesions, surgical removal is required. -Check urinary PH to assess urinary acidity^{30,31}.
<p>CAPUT MEDUSAE-RELATED BLEEDING (related to cirrhotic patients)</p>	<ul style="list-style-type: none"> -Attention during plate or bag replacement maneuvers. -If rupture of a vessel manual compression to stop bleeding, if it should continue to apply bag of ice or silver nitrate²⁹.
<p>PAIN DUE TO PYODERMA GANGRENOSUM</p> 	<ul style="list-style-type: none"> - Cleansing with physiological solution or surfactant solutions. -Try topically steroid ointments/powders and ostomy absorbent powder²⁸. -On P.M. systemic cortisone therapy, associated with topical therapy^{28, 37}. -Use of hydrofibre or calcium alginates depending on the amount of exudate to be absorbed³⁷. -A 1mg oral prednisolone tablet crushed and mixed with protective ostomy powder, apply it topically at each plaque change, covered with a primary dressing such as hydrofibre or alginate and fixed with a secondary hydrocolloid dressing, where the system plaque will then be adhered; this results in pain relief and wound healing^{38,39}. -Avoid the debridement of the wound because it can cause further trauma with aggravation of the injuries³¹. The collection device, which will be changed frequently, will need to be applied above the dressing³¹. -Convex plaques should be used very carefully to avoid even the slightest trauma to the skin³¹. -Possible antibiotic therapy on P.M.³¹. - Anti-inflammatory drugs, such as silver sulfadiazine²⁸.
<p>EXCORIATION/EROSION/ SKIN MACERATION</p>	<p>Alginates⁴⁰.</p>
<p>PRESSURE INJURIES</p>	<ul style="list-style-type: none"> -If exudates can be medicated with alginates or hydrofibre covered with a non-adherent or hydrocolloid polyurethane foam. -If bottom to be debrided use of hydrofibre or collagenase as a primary dressing, adding a secondary dressing as a hydrocolloid. -1-stage surface lesions with barrier powder and polyurethane or hydrocolloid foam³⁰.
<p>GRANULOMA</p>	<p>-Silver nitrate fillings, treatment once a week for 4 weeks⁴⁷</p>
<p>PEG PERISTOMAL SKIN INFECTION</p>	<p>- Glycerin hydrogel (GHG) possessing antimicrobial properties changed every day to coincide with the dressing for 30 days⁴¹.</p>
<p>PEG CONTAMINATION BY GASTROENTERY JUICES</p>	<ul style="list-style-type: none"> -Cleansing of the skin with dabbing water. -Useful compresses with antacid solutions commonly taken by mouth in order to decrease gastric acidity³¹.
<ul style="list-style-type: none"> • THERE IS NO RECOMMENDATION FOR THE USE OF EOSIN²⁹ • COMPARING THE EFFECT OF CHAMOMILE WITH THE USE OF TOPICAL HYDROCORTISONE CREAMS, CHAMOMILE APPLIED 2 TIMES A DAY, REDUCES PAIN, SKIN ITCHING AND INFLAMMATION (Additional randomized trials are required to refine the timing of topical application without interfering with the adhesion of the appliance or frequent removal of it)⁴². • USE OF THE NON-STEROIDAL IMMUNOSUPPRESSANT OINTMENT TACROLIMUS 1% MAY OFFER A MORE FAVOURABLE ALTERNATIVE TO TOPICAL STEROIDS⁴³. 	

Taking into account the classification of S.A.C.S. stoma skin changes: L1 hyperemic lesion, L2 erosive lesion, L3 ulcerative lesion beyond the dermis, L4 fibrinous/necrotic ulcerative lesion, LX proliferative lesion, the following dressings can be performed:

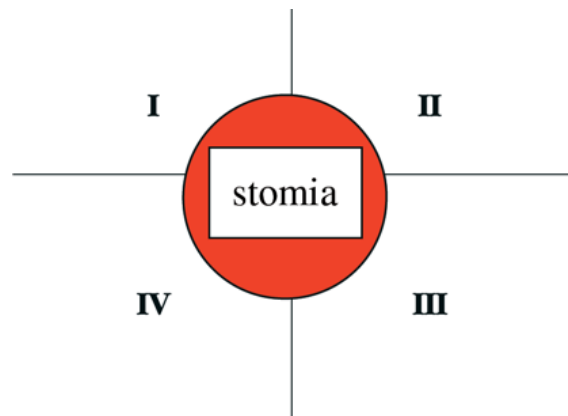
- LX or L4 apply debridement dressings such as hydrofibre or collagenase, with the application of hydrocolloid plaque on top;
- L3 or L4 if very exuding alginate dressings combined or not with silver, always with hydrocolloid plaque on top;
- L3 if less exuding hydrofibre dressings;
- L2 or L1 the same hydrocolloid plaque is the dressing, if slightly deep lesion collagen can be applied.

The S.A.C.S. classification in addition to the type of lesion L (which relates the lesion according to the depth or degree or severity and the type of tissue present) also identifies the Topography (T) of peristomal skin alterations, identifying quadrants around the stoma to describe the lesions from a topographical point of view.

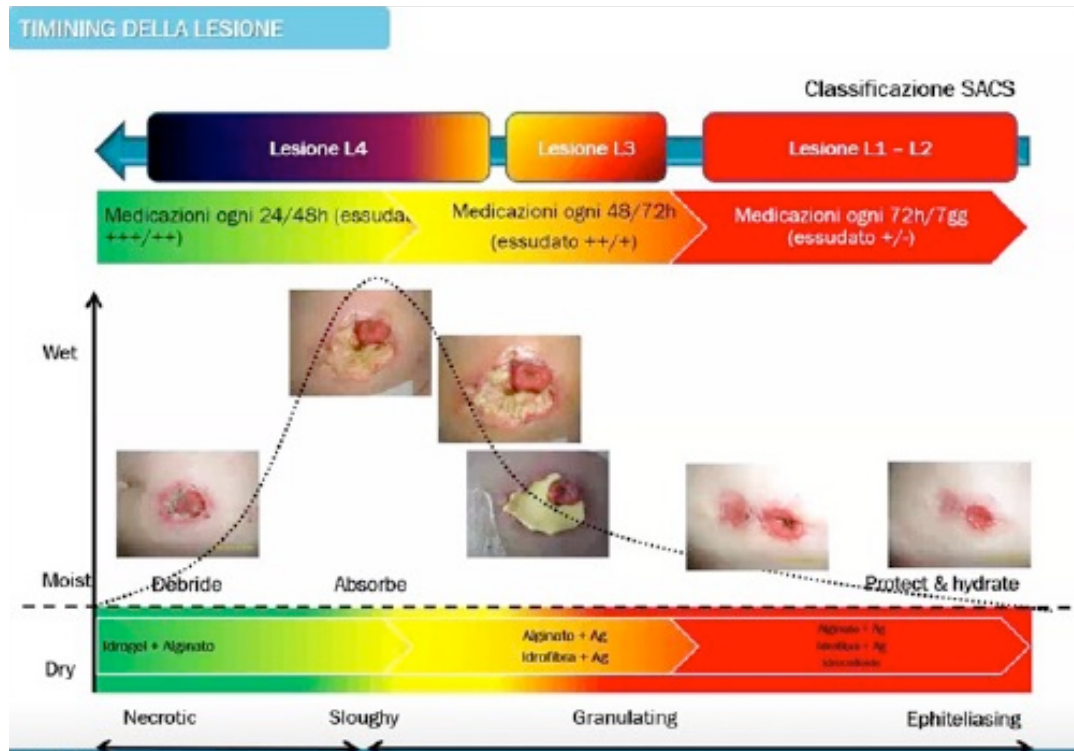
- TI upper right quadrant
- TII upper left quadrant

- TIII lower left quadrant
- TIV lower right quadrant
- Total TV (including all quadrants)

Classification T (topographic) relates the basic lesion to its location. This instrument allows for a clear and unanimously accepted identification of the state of the injury. It is an assessment method for classifying peristomal skin lesions based on objective, shared, and validated criteria and to standardize diagnostic taxonomy and treatment²³.



The following is an illustrative diagram with the timing of the dressing change.



From the literature of Wound Care it is important to read a lesion according to the TIME model, a guide focused on the principles of Wound Bed Preparation (WBP):

T (injury fabric/bottom)
I (infected/inflammation)
M (maceration/moisture imbalance)
E (epidermis)

The **TIME** evaluation criterion has been expanded in **TIMERS**, with the introduction of:

R reepithelialization and healing;
S social factor, identified in a path of education and enhancement of the skills of the stomed subject, represents a determining evaluation criterion⁴⁸.

So if you have a lesion bottom with necrotic/devitalized tissue (according to the black or yellow/slough color scale) you will have to proceed with enzymatic debridement with collagenase, autolytic debridement with hydrogel, surgical debridement. While if I have an infection (green wound bed color) it is managed with antiseptics or surfactants in solution, advanced dressings with silver or antimicrobials, possibly systemic antibiotic. If the lesion is exudative, alginates or hydrofibre or any polyurethane foams are used. If the bottom of the lesion is red (granulation tissue) or pink (neopithelium) collagen or low adhesion dressings or hyaluronic acid can be used. It will also be possible, on surgical indication, to use negative pressure therapy. In addition, to correctly read a lesion it is necessary to evaluate the margins, the bottom, the exudate, the smell, the pain and the size, possibly the characteristics of the perilesional skin.

Also an important role is NUTRITION that allows the healing of injuries. It requires energy, proteins, vitamins A-E-C, zinc, trace elements, arginine and glutamine, which are responsible for the synthesis of collagen; they also stimulate the immune response and consequently prevent inflammation. Especially in the elderly there is a risk that these nutritional principles are lacking either by deficiency in the diet or by an increase in losses or by malabsorption, this can be corrected by adding dietary supplements^{44,45,46}.

The limitations of the study are given by a few articles that experiment in the field of stomatherapy the use of alginates / hydrofibres for the use of macerations or very exudative wounds, it would be useful to do observational studies on their effectiveness; little use of paper material to provide to the patient during the therapeutic education (as an information leaflet) so that the patient, who is often an elderly person, with images (which can be preventive strategies) can be clear when he

has an onset of skin alteration so that he seeks professional advice in a timely manner.

Concluding the key message that we want to convey with this review of the literature is that the peristomal skin integrity is a fundamental requirement for the person with ostomy, because it allows a safe and effective adhesion of the plaque of the collection system, resulting in acceptance by the patient to the new situation, also improves the quality of life and reduces health costs.

Therefore, an excellent therapeutic education in the management of the ostomy is essential, at the time of the stoma care or when taking care of the patient, it is necessary to give adequate, simple and detailed information (perhaps supported by informative paper material), in order to prevent peristomal skin alterations. In addition, the health professional can apply the scientific evidence that has emerged to optimally treat peristomal skin changes, not causing the problem to negatively affect the patient and bringing the healing of the skin as soon as possible, a fundamental point.

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