

Comparing Tena Wash Mousse with Clinisan Foam Cleanser: the results of a comparative study

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Abstract

Background: As people age, their skin becomes increasingly vulnerable and sensitive and maintaining its integrity can be a daily challenge. Incontinence, in particular, can have a serious impact on the integrity of healthy skin and becomes a real challenge. **Aims:** This study compares two regimens used in the cleansing of skin following episodes of incontinence. **Methods:** Patients from a care of the elderly and rehabilitation centre were assessed three times over a 14-day period while being treated with either Tena Wash Mousse (n=13) or Clinisan Foam Cleanser (n=14). Photographs of the peri-anal area were taken at each assessment and were blindly assessed by three experts and the condition of the skin graded according to the skin assessments and the European Pressure Ulcer Panel. Cost of treatment was also assessed. **Results:** In both groups, the skin integrity assessments were consistent throughout, with no deterioration in either group. From initial to final assessment, the numbers of patients with healthy intact skin in both groups had increased. When comparing cost the larger size canister of Tena Mousse was found to be cheaper. **Conclusion:** The use of a routine skin cleansing regimen, incorporating a cleanser with a recognised pH balance as opposed to soap and water, can optimise skin integrity. **Conflict of interest:** This study was funded by SCA Hygiene.

KEY WORDS

Skin integrity
Continence
Foam cleanser
Tena Wash Mousse
Clinisan Foam Cleanser

Healthy intact skin acts as a barrier to pathogens, trauma, irritants and ultraviolet (UV) light. As individuals grow older, their skin ages and becomes less able to deal with the potential irritants, chemicals and trauma that healthy skin has to manage every day (Butcher and Whyte, 2005). The skin becomes increasingly vulnerable and sensitive and maintaining its integrity can be a daily challenge. As people are generally living longer, healthcare professionals will find themselves increasingly caring for individuals with age-related disease and its associated side-effects.

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Incontinence of urine, faeces or both is a common problem that can affect individuals across all age groups, however, high incidence is commonly reported in the elderly (Department of Health [DoH], 2000). Durrant and Snape (2003) carried out an audit of nursing home residents in the UK, which identified that at least 50% suffered from urinary incontinence. In another study of elderly nursing home residents, Bale et al (2004) found that 29% were urinary incontinent, 65% were doubly incontinent and 5% were catheterised. Similar figures are reported in the US, with more than 50% of those cared for in nursing homes experiencing urinary incontinence (Agency for Health Care Policy and Research, 1996).

This incontinence can have a serious impact on the integrity of healthy skin and becomes a real challenge for healthcare professionals who have to deal with the following:

- ▶ Skin that is damp due to incontinence begins to lose its barrier function, meaning it is exposed to the detrimental effects of shear. The shearing of the epidermis and dermis across the sacrum and into the perianal area is often visible as small patches of tissue loss, which look like

grazes and are prone to bleeding

- ▶ The caustic effect of urine and faeces increases the pH of the skin in the peri-anal area, which in turn increases the irritant effect on the skin leading to the large areas of excoriation observed in individuals who are faecally or doubly incontinent
- ▶ Maceration of the skin due to excess moisture, combined with bacterial and enzymatic activity, can result in the breakdown of vulnerable skin.

Incontinence-associated dermatitis (IAD) is widely recognised as a complication of urinary and faecal incontinence and is further exacerbated by pressure and shear forces (Gray et al, 2007). It has been suggested that these combined effects are responsible for the development of pressure ulcers (Cooper and Gray, 2001; White and Cutting, 2004). This can be further exacerbated by the method chosen to cleanse the skin following incontinence, from cleansing wipes selected, chemical agents used and technique of cleansing employed.

Skin has an acid mantle of pH4–6.8 with a mean pH of 5.5 (Nach et al, 1981). Urine and faeces are both alkaline and when combined with soap, which is also alkaline, can result in an increase in the

Table 1
Constituents of Tena Wash Mousse

Ingredients	Function
Aqua	Water/vehicle/solvent
Butane, propane	Propellent gases
Glyceryl stearate, cetyl palmitate, PEG-20 glyceryl stearate, cetearyl alcohol	Emulsifying agents
Cetearyl isonanoate	Emollient
Ceteareth-20	Emulsifier
Methylparaben, propylparaben, 2-Bromo-2-Nitropropane-1, 3-Diol	Preservative system
Parfum	Light pleasant fragrance
Limonene, hexyl cinnamal, benzyl salicylate, linalool, butylphenyl methylpropional, Hydroxyisohexyl 3-cyclohexene carboxyaldehyde	Fragrance

skin's pH, encouraging bacterial growth (Korting and Braun-Falco, 1996). The skin's natural preference to an acidic environment ensures that bacteria growth is limited, however, a more alkaline environment allows the proliferation of bacteria to occur. This increased pH increases the permeability of the skin to water-soluble irritants, thus rendering it more vulnerable to tissue breakdown (Bale et al, 2004).

It is, therefore, essential that when cleansing the skin of a patient with incontinence, healthcare professionals try to choose a regimen that optimises skin integrity and reduces the use of harmful irritants. Specialised skin care products are designed to gently but effectively cleanse, removing contamination while maintaining the acid mantle and reducing the negative effects on the skin (Bale, 2004).

The aim of this study was to compare two regimens used in the cleansing of skin following episodes of incontinence,

while also monitoring the effects on skin integrity. The study also aimed to observe for signs of skin deterioration associated with IAD, or the effects on the skin of associated cleansing regimens.

Products used in the study

Tena Wash Mousse (SCA Hygiene, Dunstable) is a cream-coloured viscose liquid, which is soluble in water. When applied to the skin it interacts with the irritant, such as urine, faeces or both by neutralising them and assisting with their easy removal. The Tena Wash Mousse does not provide a moisture-limiting friction co-efficient (Table 1).

Clinisan Foam Cleanser (Shiloh Health Care, Oldham) contains mild surfactants which break down the properties of urine and faeces. The foam has a pH value of 5.5 and combines an emollient, a water repellent deodorant and a water repellent barrier (Table 2).

The wipes used in the study were the standard ones available from the hospital's central stores — Tork Softwash (SCA Hygiene, Dunstable). These wipes are manufactured from a one-ply thickness of reinforced cellulose and are lint-free and highly absorbent.

Method

Over a period of 12 months, 30 patients from Woodend Hospital, a care of the elderly and rehabilitation centre in Aberdeen, were recruited to the study. The two wards selected to take part in the study were acute medical admissions and long-term care, both of which are elderly hospital admission wards.

Patients recruited to the study had to meet the following criteria:

- ▶▶ They had to be experiencing two or more episodes of incontinence (urinary, faecal or both) per 24 hours
- ▶▶ Their sacral and peri-anal skin had to be intact
- ▶▶ They had to be over 18 years old
- ▶▶ They had to be able to provide informed consent.

Exclusion criteria focused on those patients with broken skin, the terminally ill and those unable to provide informed consent.

Table 2
Constituents of Clinisan Foam Cleanser

Ingredients	Function
Amphoteric surfactant/cocamide DEA	Mild surfactant
Liquid paraffin/ isopropyl myristate	Emollient
Alkoxyated cetyl alcohol	Emollient/humectant
Benzylicum	Mild local anaesthetic
Triclosan	Antibacterial product preservative/deodorant
Dimethicone	Water repellent
Perfume	Light fragrance

Full local research and ethics committee (LREC) approval was sought. This was agreed after a change to patient consent. We initially requested consent if appropriate but from the next of kin if the patient was not able to consent. However, LREC wanted only patients that were able to consent. This raised some recruitment issues, as the vast majority of patients who are incontinent and at risk of skin damage also experience some degree of confusion or dementia.

There are also wider implications for the future development of research into pressure ulcers and skin integrity in these high-risk individuals, as the whole patient group could be omitted from studies due to their inability to provide informed consent. This is a subject that needs to be debated in the future.

However, informed consent was obtained from the 30 people who participated in the study. Following recruitment, the patients were assessed three times over a 14-day period, with the following information being sought.

Day one

On day one, the patient was allocated a unique identifying number which would correspond with their data collection

Table 3
Checklist for comparative study

Activity	Pre-screening	Screening (Day one)	Final review – day 14
Initial patient screening for inclusion	X		
Patient information provided	X		
Informed consent	X	X	
Clinician review follow-up recording		X	X
Skin assessment — visual inspection and EPUAP classification	X	X	X
Images taken		X	X
Adverse event recording			X

form and clinical images were taken. Also recorded at this assessment was their demographic data, including age, sex, reason for admission and any underlying medical conditions. A pressure ulcer risk assessment was also carried out (Waterlow, 1988).

Possible influencing factors for skin breakdown, such as confusion, mobility, bowel conditions, medication and dietary intake were also considered. The skin at the peri-anal area was assessed using photographs, visual skin inspection and hyperaemia assessment, and the type of incontinence, frequency of incontinence and any incontinence aids used were also factored in to the overall assessment.

Day 7 and 14

On days 7 and 14 a re-assessment of any influencing factors, such as confusion, mobility status and bowel conditions, was performed, and a full inspection of the skin was carried out.

Photographs were taken at each assessment — the images were 2–3cm distal to the anus, making patient identification impossible. These were then stored on the chief investigator's computer and held in a locked room. All of the photographic records were blindly assessed by three experts from within the field of tissue viability and the condition of the skin in the photographs graded according to the skin assessments and the European Pressure Ulcer Panel (EPUAP) classification system below:

- ▶▶ Grade 1: non-blanchable erythema of intact skin. Discolouration of the skin, warmth, oedema, induration, or hardness may also be used as indicators, particularly on individuals with darker skin
- ▶▶ Grade 2: partial thickness skin loss involving epidermis, dermis or both. The ulcer is superficial and presents clinically as an abrasion or blister
- ▶▶ Grade 3: full thickness skin loss involving damage to, or necrosis of, subcutaneous tissue that may extend down to, but not through underlying fascia
- ▶▶ Grade 4: extensive destruction, tissue necrosis or damage to muscle, bone or supporting structures with or without full thickness skin loss (EPUAP, 1999).

This blind review was carried out by viewing each separate patient file and reviewing the pictures in chronological date order; to observe for any changes. As the data was stored using their unique identifying number again patient identification was impossible.

The results of the blind photographic review was then cross-referenced with the results of the visual inspection carried out at the three assessments again by using the patients unique identifying number. Any anomalies identified were then re-reviewed by the expert panel and compared with the EPUAP classification system to achieve consensus.

The demographic data identified any trends or anomalies in the patient population. The influencing factors ensured that if there was any change in an individual's condition, this would not affect the clinical outcome of the study or could at least be factored into the findings. The aim of the photographic and visual skin assessment was to determine the integrity of the patients' skin (Table 3).

Of the 30 patients recruited to the study, 17 were male and 13 were female, with the Tena Wash Mousse group consisting of seven males and seven females and the Clinisan Foam Cleanser group consisting of 10 males and six females. The average age of the two groups was similar — 83 years in the Tena Wash Mousse group and 79 years in the Clinisan Foam Cleanser group (Table 4). Length of hospital stay varied significantly between the two groups, with those recruited to the Tena Wash Mousse group staying on average 48.6 days compared to 35.3 days for those recruited to the Clinisan Foam Cleanser group.

Results

There was a total of three uncompleted records, one in the Tena Wash Mousse group (the patient was discharged before completion of the study) and two in the Clinisan Foam Cleanser group (one patient was catheterised and the other died). Therefore, the results are based on those 27 patients who completed all three assessments, 13 in Tena Wash Mousse and 14 in the Clinisan Foam Cleanser group.

Photo assessments

The skin of the 27 patients who completed the study was assessed three times over the 14-day study period. The aim of the initial assessment, carried out on day one, was to determine the condition of the skin before patients were allocated to one of the skin cleansing regimens. Allocation of the foam cleanser was based on a method from a previous study, Cooper and Gray (2001) where it was identified that to prevent cross-contamination of product and maximise staff education that wards were randomly allocated one of the foam cleansers. The aim of the second

Table 4

Baseline data

	Tena Wash Mousse patients (n= 14)	Clinisan Foam Cleanser patients (n=16)
Male	7 (50%)	10 (62.5%)
Female	7 (50%)	6 (37.5%)
Age, median (interquartile range)	83 (79.4; 85.4)	79 (80.6; 76.5)
Length of stay — admission to assessment (average days)	48.6 days (n=13)	35.3 days (n=14)
Number of episodes of incontinence per 24 hours	Three episodes (n=13)	Three episodes (n=14)

assessment, on day seven, was two-fold — to determine any sensitivity to the product and also to assess the integrity of the skin. The final assessment was completed on day 14 and was a final review of the patient’s skin integrity.

At the initial assessment, all of the Tena Wash Mousse group (n=13) had intact skin; nine had intact skin with no changes; five had intact skin with blanching erythema, not indicative of pressure damage.

Of the Clinisan Foam Cleanser group (n=14) 14 were initially assessed with intact skin — seven had intact skin with no changes; seven had intact skin but with blanching erythema. Two had broken skin over their sacrum but this was extended beyond 3cm distal to the anus, was located over a bony prominence and was felt to have occurred due to pressure.

In both groups, the skin integrity assessments were consistent throughout, with no deterioration in either group (Figure 1). From initial to final assessment, the numbers of patients with healthy intact skin in both groups had increased.

Patterns of incontinence

Across both groups, the majority of patients were doubly incontinent (seven in the Tena Wash Mousse group and eight in the Clinisan Foam Cleanser group) — others were catheterised but were also faecally incontinent (four patients in the Tena Wash Mousse group and four in the Clinisan Foam Cleanser group). From

initial to final assessment, patients in both groups did not appear to have significant changes in the type or frequency of incontinence — both groups averaged three episodes of incontinence per 24 hours. This varied from a minimum of two episodes to continual urinary dribbling. During the study period no patient recruited showed a significant change in incontinence pattern which would affect the integrity of the skin.

Incontinence aids

Historically, studies have considered the type of incontinence aids used by patients, such as draw-sheets, bed pads

and patient-worn pads, and assessed their absorbency, effects on skin integrity and cost-effectiveness (Cooper and Gray, 2001; Brazzelli et al, 2002).

Both patient groups were provided with Tena body-worn garments ranging in size from 4–10, according to the degree of incontinence. No other moisture-absorbing devices were used. The body-worn garments were standard issue in the trust and were being used on all patients before the study began.

Patient mobility

The mobility of the patients recruited to the study was assessed as their ability to gain access to toilet facilities may have increased their risk of incontinence and in turn had an undue effect on their skin integrity (Figure 2).

Two patients in the Tena Wash Mousse group experienced a change in their mobility status. One was initially assessed as walking with assistance, but ended the study as bed or chair-bound except for toileting, although there was no change in skin integrity. The second patient was initially assessed as walking with mechanical aid, but ended the study requiring assistance, although again there was no change in skin integrity.

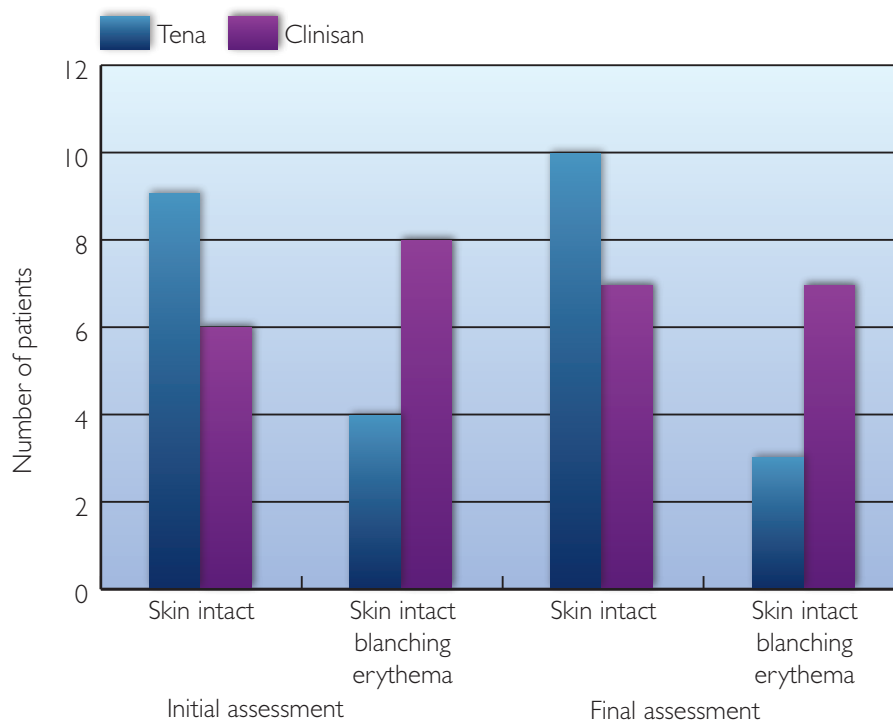


Figure 1. Skin integrity from initial to final assessment.

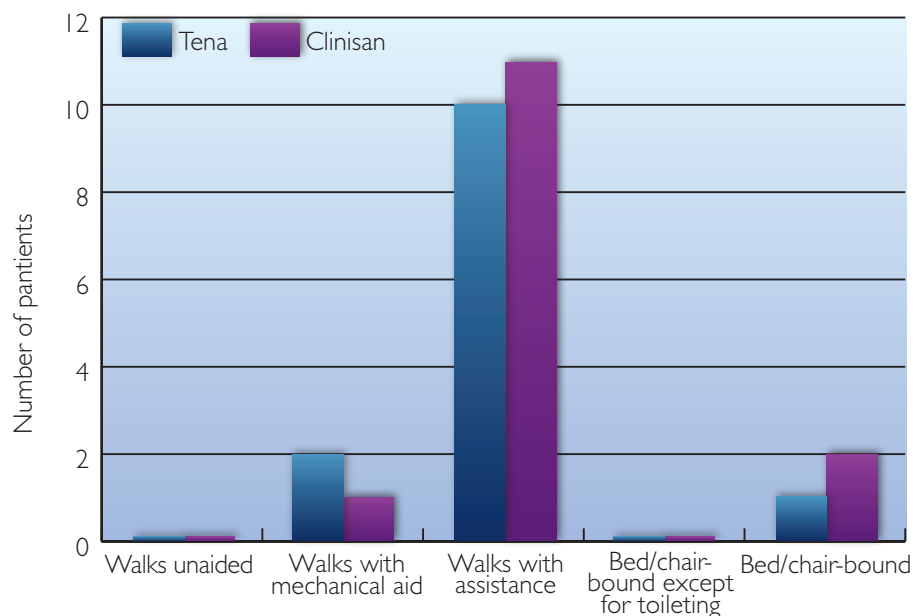


Figure 2. Patterns of mobility at initial assessment.

In the Clinisan Foam Cleanser group, only one patient experienced a change in their mobility from initial to final assessment, from walking with assistance to being bed-bound. However, in this case the condition of the skin improved from initially intact but blanching to intact.

Staff review

A small anonymised questionnaire was handed out to staff in order to get feedback on the products. The general view was that both products performed well — they were easy to spray onto skin, interacted well with incontinent contamination and were easy to remove. Both companies produce canisters of similar size — 400ml and 150ml — and staff expressed a preference for the 150ml cans as they were easier to handle and took up less space on locker tops.

Regarding the consistency of the foam, staff in areas that used Tena Wash Mousse stated that it did not dissolve as quickly as other products and held its consistency. Overall, they felt it was better than other foams they had experienced. A few staff also commented ‘it has a nice smell’ and that ‘patients liked the smell of it’.

Cost-effectiveness

A cost comparison between the two products was carried out using the following methods:

- ▶▶ Comparing the current product

contract price (Table 5)

- ▶▶ Cost review based on foam cleanser usage over a specified period of time.

Staff were asked to select canister size based on the length of patient stay and the episodes of incontinence. If, for example, a patient was only going to be on the ward for 2–3 days the 150ml can was selected; if, however, the patient was admitted for more than three days, or had a severe incontinence problem requiring frequent cleansing, then the staff were instructed to use the 400ml canister.

Within the study period it was observed that as the patients were located on care of elderly wards, where the length of stay averaged 13–14 days, the 400ml can was more frequently selected. Table 6 shows a cost comparison of the annual usage of foam cleansers within the wards. There was an overall saving on these wards of £80.36 when using the Tena Wash Mousse.

Grampian Central stores were able to provide quantities of foam cleanser purchased in both 400ml and 150ml canisters for each clinical area across Grampian, from April 2007–March 2008. These figures were used to compare annual usage for both Tena Wash mousse and Clinisan Foam Cleanser:

Therefore if we compare foam cleansers usage across the entire NHS

Grampian region, the biggest spend is on the 400ml canister — thus a saving of £1,292.50 over a year could be made by using the Tena Wash Mousse as opposed to the Clinisan Foam Cleanser (Table 7).

The 150ml can of Tena Wash Mousse is more expensive than the equivalent Clinisan Foam Cleanser, with it costing £566.30 a year more if Tena Wash Mousse is used compared with Clinisan. By combining the savings from purchasing the 400ml cans with the loss of the 150ml cans there is still an overall saving of £726.20 over a year.

Discussion

The aim of this study was to compare two skin cleansers in a patient group identified as being at risk from IAD and associated pressure damage. Patients were recruited from a care of the elderly setting and there was little demographic difference between the two groups. There was a difference between length of stay, however, as patients in the Tena Wash Mousse group averaged 48.6 days as an inpatient, compared with those in the Clinisan Foam Cleanser group, who averaged 35.3 days. This may be due to a higher number of patients in the Tena Wash Mousse group being recruited from long-term care wards, whereas the majority of the Clinisan Foam Cleanser group were from elderly admission units. This, however, does not have any impact on the study results.

Issues such as mobility, type of incontinence and the use of incontinence aids were all assessed to determine any differences, but generally all of these categories proved similar for both patient groups.

Table 5
Cost comparison of the two products

	Tena Wash Mousse	Clinisan Foam Cleanser
150ml canister	£1.18	£1.11
400ml canister	£1.49	£1.60

Table 6

Product usage for Woodend Hospital April 20007–March 2008

	Tena Wash Mousse	Clinisan Foam Cleanser	Price difference
400ml	£2,962.12 (1,988 canisters)	£3,180.80 (1,988 canisters)	Saving £218.68
150ml	£2,331.68 (1,976 canisters)	£2,193.36 (1,976 canisters)	Loss £138.32

Table 7

Product usage for NHS Grampian April 2007–March 08

	Tena Wash Mousse	Clinisan Foam Cleanser	Price difference
400ml	£17,507.50 (1,1750 canisters)	£18,800 (1,1750 canisters)	Saving £1,292.50
150ml	£9,546.20 (8,090 canisters)	£8,979.90 (8,090 canisters)	Loss £566.30

Regarding the issue of skin integrity, interpretation of the results indicates that in the Tena Wash Mousse group, nine patients were assessed as having healthy intact skin on admission and four had healthy but blanching erythema. The Clinisan Foam Cleanser group had only seven patients with healthy intact skin and eight with intact but blanching skin. However, the results show that the products performed equally well in both groups, with the patient's skin staying the same or improving slightly, with no evidence of deterioration or breaks. The choice between these two cleansers is, therefore, based purely on patient and staff preference, and cost comparison. The results clearly demonstrate that if usage is based on using both sizes of canister, significant cost savings can be made if the 400ml can is used more often. This is based on Scottish contract prices.

Conclusion

This study adds further evidence to support current best practice and clinical guidelines, which recommend that patients with incontinence should have their skin cleansed with a foam cleanser at

each incontinent episode (NHS Quality Improvement Scotland, 2002; 2005). The use of a routine skin cleansing regimen, incorporating a cleanser with a recognised pH balance as opposed to soap and water, can optimise skin integrity. **WUK**

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Key Points

- ▶▶ Incontinence can have a serious impact on the integrity of healthy skin.
- ▶▶ Healthcare professionals should choose a regimen that optimises skin integrity and reduces the use of harmful irritants.
- ▶▶ In a comparison of Tena Wash Mousse and Clinisan Foam Cleanser both products performed equally well with the patient's skin staying the same or improving slightly with no evidence of deterioration or breaks.
- ▶▶ In terms of cost, Tena Wash Mousse was found to be the cheaper option when purchasing the larger 400ml sized canister.

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