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SARAYA

c o n t e n t s

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Chamomile

Chamomile (also spelled camomile) is a small daisy-like flower commonly used to make herbal tea. It is naturally caffeine-free and is best known for its calming and relaxing effects. Many people drink chamomile tea before bed because it may help promote better sleep and reduce mild anxiety. Chamomile contains plant compounds such as flavonoids and apigenin, which have antioxidant and anti-inflammatory properties. It has also been traditionally used to soothe digestive discomfort, stomach cramps, and bloating. While chamomile is generally safe for most people, those with allergies to ragweed or related plants should use caution, and it may interact with certain medications such as blood thinners.

Intestinal Colonization Rates and Influencing Factors of Carbapenem-Resistant Gram-Negative Bacterial Colonization in ICU Patients: Results from an Active Screening Study

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Introduction

Carbapenems are key β-lactam antibiotics[1]; however, their inappropriate use has contributed to the growing prevalence of Carbapenem-resistant gram-negative bacilli (CRGNB)[2]. These pathogens spread horizontally via Carbapenem-resistance genes (CRGs). Because intensive care unit (ICU) patients are frequently exposed to invasive procedures and antibiotics, they are at a particularly high risk of CRGNB colonization and infection[4]. Active screening enables the early detection and timely implementation of infection prevention and control (IPC) [5]measures to reduce healthcare-associated infections such as CRGNB. This study aimed to determine the intestinal CRGNB colonization rate and its associated factors among ICU patients and to evaluate the effectiveness of targeted IPC interventions against CRGNB.

1. Materials and Methods

1.1. Study Population

Patients admitted to the ICU between January 1, 2024 and December 31, 2024 were included. The inclusion criteria consisted of critically ill patients who had undergone invasive procedures or surgery and completed rectal swab screening within 24 hours of ICU admission. Multiple ICU admissions by the same patient were recorded separately. The exclusion criteria included pregnant women, untestable samples and community-acquired infections.

1.2. Methods

1.2.1. Data Collection

Demographic information, number of hospitalization days before ICU admission, and details of antimicrobial type and duration were obtained from the hospital infection surveillance system.

1.2.2. Specimen Collection and Detection of CRGs

Rectal swab specimens were collected and tested using the GeneXpert automated system and DNA extraction kits. CRGs, including *blaKPC, blaNDM, blaVIM, blaOXA-48, blaIMP*[3,6], were detected by Real-time Polymerase Chain Reaction.

1.2.3. Intervention and Evaluation

Comprehensive IPC measures, such as patient isolation, environmental disinfection, hand hygiene and antimicrobial stewardship, were implemented for CRGNB-colonized patients in 2024. ICU lengths of stay and patient outcomes were compared between 2023 (baseline period) and 2024 (intervention period).

1.3. Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics Version 26. Normally distributed continuous data were presented as mean ± standard deviation ($\bar{X} \pm S$) and compared between groups using an independent-samples t-test. Non-normally distributed continuous data were expressed as median (P25, P75) and compared using the Mann–Whitney *U* test. Categorical data were presented as n (%) and compared using the χ^2 test or Fisher's exact test, as appropriate. Multivariate analysis was performed using logistic regression. A two-sided significance level of $\alpha = 0.05$ was used.

2. Results

2.1. CRGNB Colonization Rate and CRG Distribution

Among the 748 screened patients, the intestinal CRGNB

Patient Characteristics		Colonized Group (n=86)	Non-colonized Group (n=662)	Odds Ratio (OR)	95%CI	*P*-value
Age（years）		70.00（59.75，76.00）	65.00（52.00，73.25）	1.103	0.995～1.031	0.150
Gender[n(%)]	Male	49（56.98）	438（66.16）	0.794	0.482～1.308	0.366
	Female	37（43.02）	224（33.84）			
Hospital days before ICU admission（day）		5.00（0.75，11.75）	1.00（0.00，6.00）	1.055	1.030～1.081	＜0.001*
Days of antibiotic use（day）		5.00（2.00，10.00）	5.00（2.00，9.00）	1.008	0.976～1.040	0.636
Types of antibiotics used[n(%)]	β-lactams	57（70.37）	515（84.56）	-	-	-
	aminoglycosides	5（6.17）	10（1.64）	0.442	0.244～0.801	0.006*
	Others	19（23.46）	84（13.79）	2.261	1.249～4.092	0.007*

Table 1. Logistic regression analysis of the colonization of CRGNB in ICU patients' intestinal tracts

colonization rate was 11.48%. Among the 86 colonized cases, *blaNDM* was the most frequently detected gene (59.30%), followed by *blaIMP* (39.53%) and *blaKPC* (22.09%). Some patients have carried multiple CRGs simultaneously.

2.2. Factors Associated with CRGNB Colonization

Univariate analysis revealed no significant differences in age, sex or duration of antimicrobial use between the colonized and non-colonized groups ($P > 0.05$). However, the duration of hospitalization before ICU admission (OR = 1.055, $P < 0.001$) and the type of antibiotic used were significantly associated with colonization risk. Patients receiving aminoglycosides had a lower risk of colonization (OR = 0.442, $P = 0.007$), whereas those treated with other antibiotic classes had a higher risk (OR = 2.261, $P = 0.007$).

2.3. Effects of Infection Control Measures

Compared to 2023, following the implementation of targeted IPC interventions in 2024, the median ICU duration of stay decreased from 6 days to 5 days ($P < 0.001$), and the mortality rate declined from 34.42% to 27.62% ($P = 0.006$).

3. Discussion

This study demonstrated that the intestinal CRGNB colonization rate among ICU patients was 11.48%, which was predominantly associated with the *blaNDM* gene. Prolonged hospitalization before ICU admission was identified as an independent risk factor, possibly due to increased exposure to antimicrobial resistance in the hospital environment and selective pressure from broad-spectrum antibiotic use. Conversely, aminoglycoside use was linked to a lower risk of colonization, likely because these agents exert a minimal impact on intestinal microbiota and are less prone to induce carbapenemase[7]expression.

Active screening combined with rapid molecular diagnostics allows for the early identification of colonized patients and facilitates prompt IPC interventions. This study confirmed that a combination of isolation, enhanced environmental disinfection and antimicrobial stewardship effectively reduces CRGNB transmission, shortened ICU stays and improved patient outcomes. However, as a single-center retrospective analysis, this study did not account for underlying conditions. Future studies using propensity score matching are warranted to further evaluate the impact of CRGNB colonization on patient prognosis.

4. Conclusion

The intestinal CRGNB colonization rate among ICU patients remains relatively high. Efforts to reduce pre-ICU hospitalization duration, optimize antimicrobial use and strengthen active screening and isolation practices are essential to mitigating CRGNB transmission and improving patient outcomes[8].

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日本語要約

積極的スクリーニングに基づくICU患者におけるカルバペネム耐性グラム陰性菌の腸内コロニー形成率とその影響因子

本研究では、ICU患者におけるカルバペネム耐性グラム陰性菌（CRGNB）の腸内定着率および関連因子を明らかにし、感染予防対策の効果を評価した。2024年1月から12月にICUに入院した患者748例を対象に直腸スワブ検査を行ったところ、CRGNB定着率は11.48%であった。検出遺伝子は*blaNDM*が最も多く（59.3%）、次いで*blaIMP*（39.53%）、*blaKPC*（22.09%）であった。ICUへの転入前入院日数は独立したリスク因子であり、アミノグリコシド系抗生物質の使用は定着リスクを低下させた。2024年に策定した重点的感染対策（患者隔離、環境消毒、手指衛生、抗菌薬適正使用）を実施したところ、2023年と比較してICU滞在日数を有意に減少させることができた。CRGNB定着抑制には、ICU入室前在院日数の短縮、積極的スクリーニング、適切な感染対策、抗菌薬管理の強化が有用と考えられた。

Innovative Technology

New Material Sophorolipid (SOFORO) and Its Applications in Healthcare Settings: SARAYA's Power Quick Series – Development History and Distinctive Product Performance

Yoshifumi Jahana, Quan Glen Lelyn
Manager, Saraya Research Institute, Saraya Co., Ltd.

Introduction

The proper use of reusable medical devices, such as surgical instruments and endoscopes, in clinical practice is essential for maintaining the safety and quality of medical care. Reprocessing is crucial for reusing medical devices after use, and thorough cleaning and disinfection/sterilization must be performed to maintain the smooth operation and function of the equipment and to provide safe medical care to patients. Cleaning, in particular, is the foundation for enhancing the effectiveness of subsequent disinfection or sterilization by removing a wide variety of contaminants, including blood, lipids and tissue fragments. Simultaneously, reducing the number of contaminating microorganisms minimizes the exposure risk for staff involved in the reprocessing, contributing to safety.

Saraya's history of products for medical device reprocessing

Under its corporate philosophy of "Connect Through Life," SARAYA has advanced the development of products for medical device reprocessing. In 2000, SARAYA launched **Acezyme**, a powder-type enzyme-based immersion cleaning agent, and in 2005, SARAYA introduced the medical device cleaning detergent series **Power Quick (PQ)**. Centred on the concept of "reliable cleaning," the **PQ series** expanded by addressing on-site issues one by one, accumulating evidence-based performance design related to overall quality of reprocessing in areas such as cleaning performance, material compatibility, rinsability and low foaming properties.

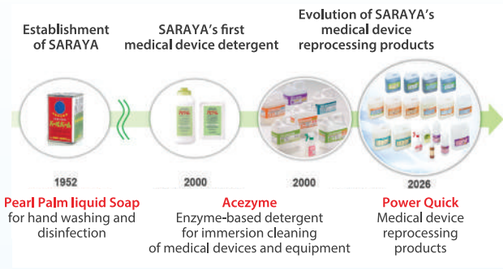


Figure 1. SARAYA's history of products for medical device reprocessing

Introduction of Power Quick Products

One of the distinctive products of the PQ series is the **PQ Pre-cleaning Spray**. Designed to prevent the drying and coagulation of blood and other contaminants on equipment after use, as well as to suppress microbial growth, the product helps maintain a condition that facilitates effective cleaning at the initial stage of the cleaning process. As shown in **Figure 2**, while dirt solidifies as drying time increases, the pre-cleaning spray treatment suppresses drying and solidification. Furthermore, because the product is foamless, rinsing is unnecessary, allowing a seamless transition to the mechanical cleaning process and improving operational efficiency on site. In addition, chloride ions from tap water, saline solutions and drug residues can cause corrosion of stainless steel. To address this issue, the pre-cleaning spray has been formulated with corrosion resistance in mind **(Table 1)**, contributing to equipment longevity and high-quality reprocessing.

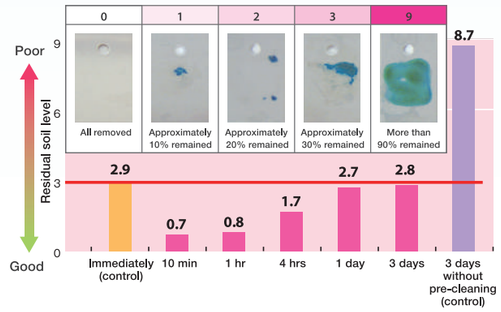


Figure 2. The effects of drying and solidification of soil and the effectiveness of PQ Pre-cleaning Spray

Table 1. Prevention of corrosion by chloride ions

After 1 week of immersion	
PQ Pre-cleaning Spray	**1.0% NaCl solution (Control)**
No change	Pitting corrosion and rust occurensce observed
	

PQ Multitype Enzyme Cleaner contains lipase, amylase and cellulase in addition to protease to address complex soils. However, there is a known issue that the higher the pH, the stronger the cleaning power but the less stable enzymes become. To resolve this, SARAYA developed a formulation that keeps the pH of the concentrate lower while increasing the pH after dilution (e.g. concentrate pH 8.2 and working solution pH 9.2), thereby achieving enzyme stability and strong cleaning performance.

To address the need to reduce the burden of using different cleaning agents in the cleaning process, **PQ Multi-Purpose Enzyme Cleaner** is compatible with jet cleaning, ultrasonic cleaning and immersion (manual) cleaning. To maintain corrosion protection for aluminium while ensuring low-foaming performance, the formulation incorparates

carefully selected corrosion inhibitors with low-foaming characteristics, thereby achieving an optimal balance between material protection and cleaning performance.

PQ Disinfecting Enzyme Cleaner, which is designed to provide cleaning and disinfection, addresses the issue of protein adhesion reported for certain overseas cleaning agents with disinfecting claims. By selecting antimicrobial components less likely to cause fixation and designing a formulation that does not inhibit antimicrobial activity, this product achieves an optimal balance between disinfecting efficacy **(Table 2)** and cleaning efficacy **(Table 3)**.

Table 2. Efficacy of PQ Disinfecting Enzyme Cleaner (EN13727 and EN13624)

Test organism	Use concentration	Test conditions	Effective contact time
Pseudomonas aeruginosa ATCC 15442	1.0%(v/v)	40°C / Dirty	10 minutes
Acinetobacter baumannii JCM 6841	1.0%(v/v)	40°C / Dirty	10 minutes
Pseudomonas aeruginosa GTC 2017	1.0%(v/v)	40°C / Dirty	10 minutes
Enterococcus hirae ATCC 10541	1.0%(v/v)	40°C / Dirty	10 minutes
Enterococcus faecium ATCC 6057	1.0%(v/v)	40°C / Dirty	10 minutes
Staphylococcus aureus ATCC 6538	1.0%(v/v)	40°C / Dirty	10 minutes
Enterococcus faecalis ATCC 51299	1.0%(v/v)	40°C / Dirty	10 minutes
Staphylococcus aureus ATCC 700698	1.0%(v/v)	40°C / Dirty	10 minutes
Candida albicans ATCC 10231	1.0%(v/v)	40°C / Dirty	10 minutes

Table 3. Cleaning efficacy of PQ Disinfecting Enzyme Cleaner

CLEANING CONDITIONS	PRODUCTS				
	PQ Disinfecting Enzyme Cleaner	Brand A (disinfecting multi-enzyme cleaner)	Brand B (multi-enzyme cleaner)	Brand B (non-enzyme disinfecting cleaner)	PQ Multi-type Enzyme Cleaner
30 min at 40°C					

An indispensable key differentiator of PQ is the utilization of biosurfactant **sophorolipids (Figure 3)**. This biosurfactant, obtained by fermenting sugar and vegetable oil with yeast, provides an excellent balance of detergency, safety and **rinsability** required for medical device cleaning. In terms of cleaning efficacy, a high level of effectiveness has been observed when the surfactant is used in combination with enzymes, even in comparison with other surfactants **(Table 4)**. Moreover, insufficient rinsing – whether in manual (immersion) or automated processes – can increase the risk of detergent residues. Saraya positions **sophorolipids** as core technology that simultaneously deliver high detergency, low foaming, good **rinsability** and environmental consideration, with applications in multiple PQ products **(Figure 4)**, including **Multitype Enzyme Cleaner and Multi-Purpose Enzyme Cleaner.**

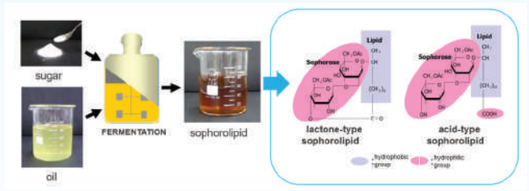
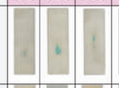
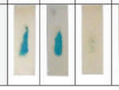


Figure 3. Fermentation and structure of sophorolipids

Table 4. Cleaning efficacy of surfactants in the presence of process

CLEANING TEMPERATURE	TESTED SURFACTANTS* and their cleaning efficacy									
	SL	AES	SDS	LAS	DDAC	AB	AE	APG	BP	TOI
40°C										
20°C										

***Surfactants used in the test: SL**: Sophorolipids, AES: Sodium polyoxyethylene dodecyl ether sulphate, SDS: Sodium dodecyl sulfate, LAS: Sodium linear alkylbenzene sulfonate, DDAC: Didecyldimethylammonium Chloride, AB: Lauryldimethylaminoacetic acid betaine, AE: Polyoxyethylene lauryl ether, APG: Alkyl polyglycoside, BP: Polyoxyethylene polyoxypropylene glycol

Figure 4. PQ products containing sophorolipids

Moving forward, SARAYA will continue to refine, based on scientific evidence, the key attributes required in reprocessing settings – reliable cleaning performance, ease of use and safety for people, materials and the environment. Through the PQ series, we remain committed to contributing to the safety and quality of healthcare worldwide.

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Case Study

Convenient and efficient work with Power Quick Pre-Cleaning Spray and Rust Remover S

Cho Ray Hospital

Address : 201B Đ. Chí Thanh, Phường 12, Quận 5, Thành phố Hồ Chí Minh, Vietnam
Number of beds : 3,200 (As of July, 2024)
Total number of staff : 4,500 (As of July, 2024)
Website : www.choray.vn

Cho Ray Hospital is one of the largest hospitals in Vietnam and is located in the southern part of the country. The hospital is under the Ministry of Health and provides special and high-level care for patients while functioning as a training and practical facility for medical students. In addition, the hospital plays a wide range of roles, including providing health checkups for local residents and foreigners and conducting research on the prevention of infectious diseases. As Cho Ray Hospital is one of the largest healthcare facilities in the country, many patients seek care from this hospital every year.

Product in Use Power Quick Pre-Cleaning Spray

Steps taken to introduce Power Quick Pre-Cleaning Spray

What led you to consider introducing Power Quick Pre-Cleaning Spray?

We wanted to improve the pre-cleaning process by preventing blood and organic material from drying on instruments before the main cleaning step. We also needed a convenient, easy-to-use solution to support infection control during instrument reprocessing.

Why did you choose Power Quick Pre-Cleaning Spray?

The spray format is convenient and easy to use at the point of care. It keeps blood from drying and provides a long enough duration of antimicrobial protection, making cleaning more effective and easing the subsequent washing step.

After the introduction of the Power Quick Pre-Cleaning Spray

How did you inform staff members about the use of Power Quick Pre-Cleaning Spray?

We provided hands-on training on when to use the product, how to properly spray and cover instrument surfaces, and how to handle instruments afterward for the best results.

And what was the feedback?

Staff found the product easy to use and convenient for daily practice.

Comments from a staff "It is good to keep moist while waiting to be transported to the reprocessing area, preventing biofilms and dirt from adhering."

Where do you place Power Quick Pre-Cleaning Spray?

The product is used in areas with a high volume of instruments after procedures or surgeries, such as operating rooms, procedure rooms, and initial instrument processing areas.

Have there been any changes since the Power Quick Pre-Cleaning Spray was introduced?

The instrument pre-cleaning process has become more convenient and efficient.

Next Step

What are the challenges ahead?

An ongoing challenge is maintaining consistent staff compliance and continuing to optimize the instrument reprocessing workflow.

Interview date: June 01, 2026

Cho Ray Hospital

Address	:	201B Đ. Chí Thanh, Phường 12, Quận 5, Thành phố Hồ Chí Minh, Vietnam
Number of beds	:	3,200 (As of July, 2024)
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Product in Use Power Quick Rust Remover S

Steps taken to introduce Power Quick Rust Remover S

What led you to consider introducing Power Quick Rust Remover S?

We wanted to improve the maintenance and longevity of surgical instruments by removing rust stains and preventing corrosion. We also needed an effective, easy-to-use solution to support instrument quality management and infection control.

Why did you choose Power Quick Rust Remover S?

This product effectively removes rust and discoloration while being easy to apply during the reprocessing workflow. It also helps restore instruments to good condition and supports their safe and efficient reuse.

After the introduction of Power Quick Rust Remover S

How did you inform staff members about the use of Power Quick Rust Remover S?

We provided hands-on training on when to use the product and how to properly soak and clean instruments, following the manufacturer's instructions.

And what was the feedback?

Staff noticed a clear improvement as rust stains were effectively removed from the instruments; they found the process simple and efficient.

Comments from a user "It has a good rust removal ability, and it is fast and convenient because it does not require much physical contact."

Where do you place Power Quick Rust Remover S?

The product is mainly placed and used in the CSSD for instrument cleaning and maintenance.

Have there been any changes since Power Quick Rust Remover S was introduced?

Instrument maintenance and restoration have become more

Next Step

What are the challenges ahead?

An ongoing challenge is maintaining consistent instrument-maintenance practices and continuing to optimize the reprocessing workflow.

Interview date: June 03, 2026

Introduction

Incontinence-associated dermatitis: (IAD) is a major issues for people with incontinence. The distress comes from aching pain and pruritus is intense. IAD affects Quality of Life, such as feeling of discomfort or diminishing self-respect. Treatment for IAD requires time and cost; thus, it is important to prevent and control it appropriately.

What is IAD?

IAD is a skin condition that occurs when urine, faeces or both come into contact with the patient's skin. Common sites include the perianal area, gluteal cleft, buttocks, pubic area, groin, lower abdomen and crural area (Figure 1). The main symptoms include skin changes accompanied by subjective symptoms, such as discomfort, pain, burning sensation, pruritus, and stinging pain.

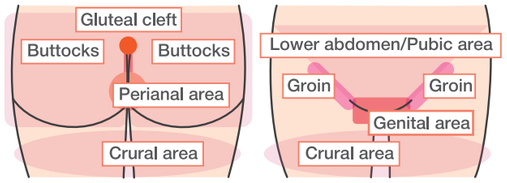

Figure 1. Common site of IAD
(Created based on reference 1~3)

The structure and role of the skin

The skin has a two-layer structure consisting of the epidermis and the dermis. The outer layer is mainly composed of keratinocytes, which mature, move towards the surface and eventually form corneocytes that make up the stratum corneum. In the stratum corneum, intercellular lipids fill the spaces between corneocytes, and the cells in the dermis are tightly bound together. This structure prevents excessive water loss and protects against the invasion of foreign substances, such as bacteria and irritants.

In this way, the epidermis plays an important role in the skin's barrier function.

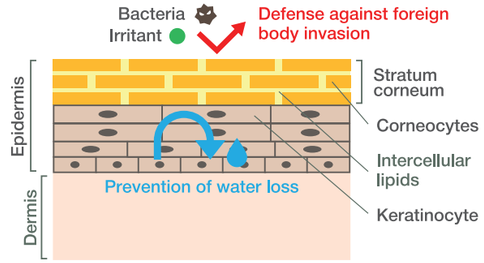

Figure 2: Structure and role of skin
(Created based on reference 4)

Pathogenesis (Figure: 3)

- **Disruption of skin barrier function due to skin maceration**

  If urine or feces (hereinafter referred to as excreta) touch the skin for a long time, the fluid of excreta causes the corneocytes to bulge, the intercellular lipids to decrease, and the chink of the corneocytes to expand. Furthermore, intercellular lipids are decomposed by fecal lipase (a lipid-degrading enzyme), and `skin maceration` occurs. Macerated skin has a reduced barrier function, making it more susceptible to invasion by bacteria and irritants. It is also less resistant to friction; thus, the outer layer is easily damaged when it comes into contact with clothing, incontinence pads, and so on.

- **Internal skin damage caused by the invasion of digestive enzymes and bacteria**

  The reduced barrier function of the skin, the digestive enzymes and the bacteria in feces invading the skin, can cause the following damages:

1. **Tissue haemorrhage induced by digestive enzymes**
   The proteases in faeces (proteolytic enzymes) can penetrate the skin in which they degrade cells and the connections between them, leading to a further reduction in the skin's barrier function. Furthermore, the capillary walls are degraded, and bleeding occurs in the tissue.Mild rubor occurs without loss of the skin surface.
2. **Bacterial damage to dermal tissue**
   Due to skin maceration and the reduction in skin barrier function caused by proteases, bacteria actively invade and proliferate in the skin, forming aggregated masses and damaging the underlying dermis. As a result, the dermis becomes fragile and can be easily disrupted, even by slight force, leading to the formation of blisters and erosion.

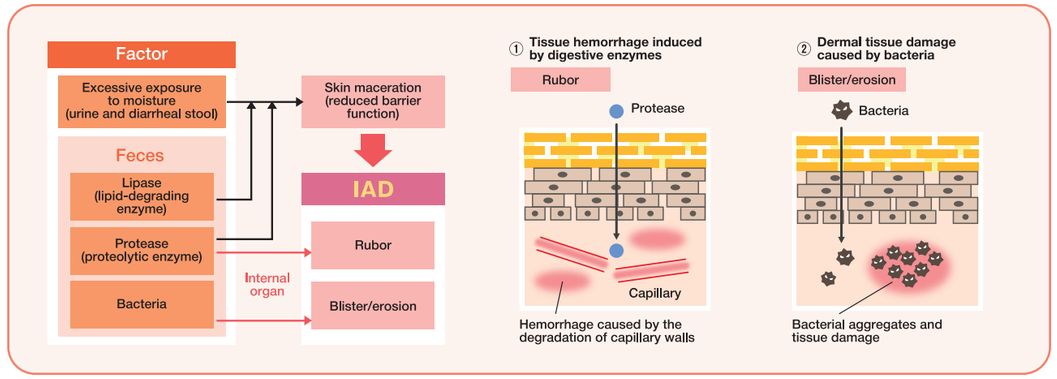

Figure 3: Pathogenesis of IAD (Created based on reference 4)

Multiple effects of excreta

Urea in urine is degraded into ammonia and carbon dioxide by urease (a urea-degrading enzyme) and digestive enzymes in faeces. Normally, the skin maintains a mildly acidic pH. However, ammonia, which is alkaline, increases the skin's pH. This promotes bacterial growth and increases the risk of IAD. An elevated pH also enhances the activity of digestive enzymes, further increasing the risk of skin damage. Furthermore, watery stools contain a large amount of digestive enzymes and therefore have a higher skin-damaging potential than hard stools.

Risk of accrual and assessment

The risk of IAD accrual is approximately 5.5 times higher in urine with a strong odour, while it is approximately 9.7 times higher in loose and watery stool. They are have been reported to be more like to cause IAD than when these factors are absent. Therefore, it is important to assessment excreta to control/prevent IAD.

- **Urine assessment**
  During urine assessment, we check for a strong odour (ammonia). Normal urine does not have a strong odour. However, when urine is infected with urease-producing bacteria, these bacteria produce ammonia, resulting in a characteristic strong smell. Therefore, the presence of a strong odour may indicate an increased risk of IAD.
- **Faeces assessment**
  Loose and watery stools are associated with a high risk of IAD.

The Bristol Stool Form Scale is recommended for the objective and consistent assessment of stool conditions. This scale classifies stool into seven types (1–7), with types 5 and 6 indicating loose stool, and type 7 indicating watery stool.

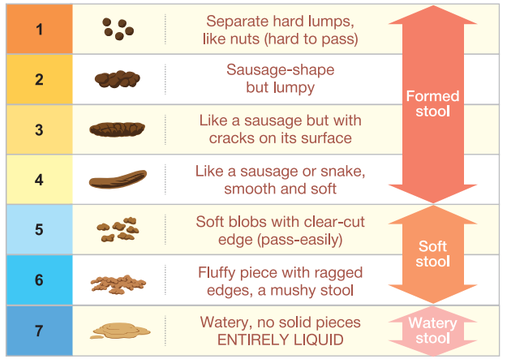

Figure 4: Bristol Stool Chart
(Created based on reference 1,2)

Skincare for prevention and control

The standard approach to IAD prevention and management includes bed baths and cleansing (lavage). When formed stool or normal urine adheres to the skin, standard skincare should be provided. However, in cases of loose stool, watery stool, or strongly odorous urine, it is important to add a protective, water-repellent barrier to the standard skincare.

Bed -bath

- Cleansing should be performed after each episode of excretion (incontinence). Gently remove excreta using wet wipes or a skin cleanser.
- Avoid strong rubbing and do not use towels to reduce mechanical irritation to the skin.
- Use a skin cleanser when excreta cannot be easily removed with wet wipes.
- Wet wipes and skin cleansers containing oil are recommended, as they reduce friction and help minimise mechanical irritation to the skin.
- Rinsing with tepid water is recommended when excreta cannot be adequately removed by bed bathing alone.

Cleansing

- Excreta and scales should be cleaned once a day using a skin cleanser.
  ※Even when the frequency of urination and defecation is high, the use of skin cleansers should be limited to no more than once a day to prevent increased skin irritation.
- To prevent irritation to the skin, use a mildly acidic skin cleanser with a pH close to that of the skin (pH 5.5–7.0).
- Gently cleanse using the hands with form, and do not scrub strongly. Do not use a sponge or a nylon towel to reduce mechanical irritation to the skin.
- The skin cleanser should be washed off adequately with tepid water so that it will not remain on the skin.
- Dry the skin by gently patting, without rubbing after washing.

Moisturising

- Apply a moisturiser more than once a day, especially after washing or bathing, as cleansing can remove natural skin oils.
- Use a moisturiser that contains emollient ingredients (e.g. petrolatum or mineral oil), which reduce transepidermal water loss and support intercellular lipids.
- Moisturisers containing ceramides or natural moisturising factors (NMF) are effective in enhancing and restoring skin barrier function.
- Moisturisers containing humectants (e.g. glycerine and urea), which attract water, should not be used on macerated skin.
- Apply moisturisers to all areas that may come into contact with excreta.

Protection (water-repellent)

- The frequency and timing should follow the manufacturer's instructions, while also taking into account the condition of the water-repellent barrier.
- Apply a water-repellent skin protectant containing petrolatum and dimethicone to prevent excreta from adhering to the skin.
- Use a skin barrier film containing acrylic copolymers when it is necessary to secure a dressing, such as in pressure ulcers, as adhesive products cannot be used over skin protectants.
- Skin protectants should be used in all areas where excreta may adhere.

References

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