Dressings for Preventing Pressure Ulcers: A Meta-analysis

Lei Huang, MD, ET; Kevin Y. Woo, PhD, RN, ACNP, GNC(C), FAPWCA; Li-Bao Liu, MD; Rui-Juan Wen, BSN; Ai-Ling Hu, MD, ET; and Cheng-Gang Shi, MD

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引言人: 許倫嘉護理師
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Metric Trend

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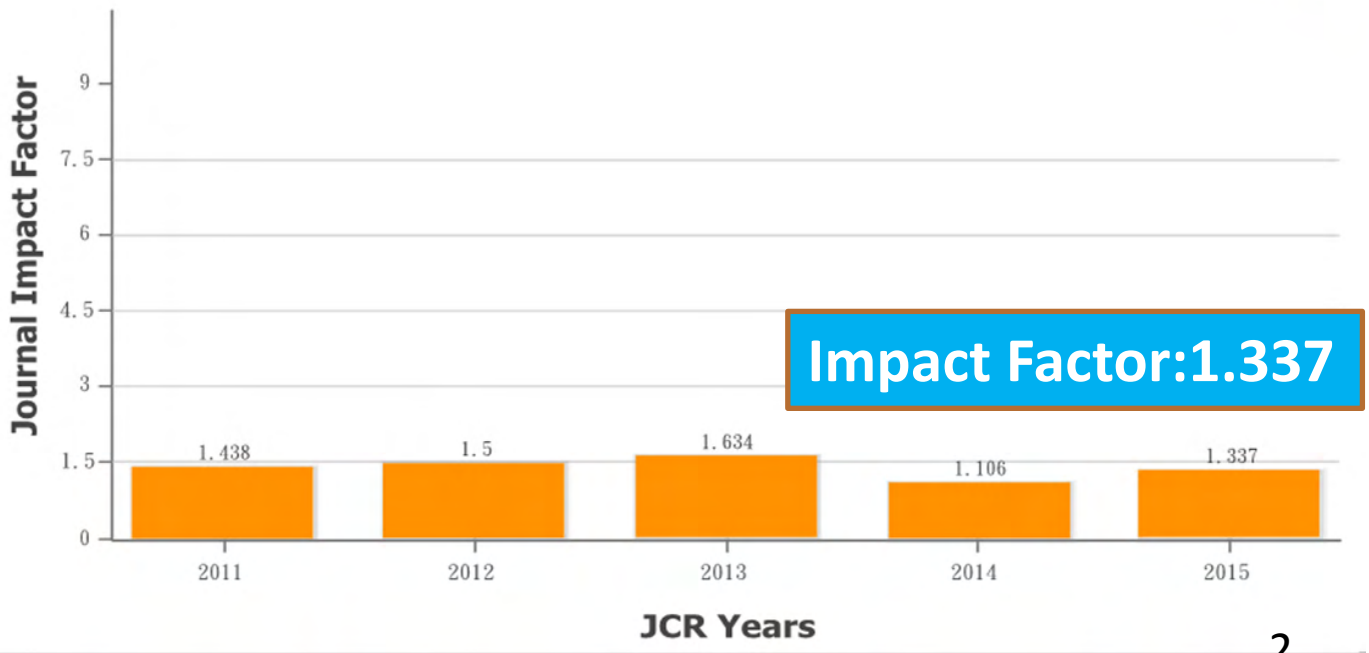
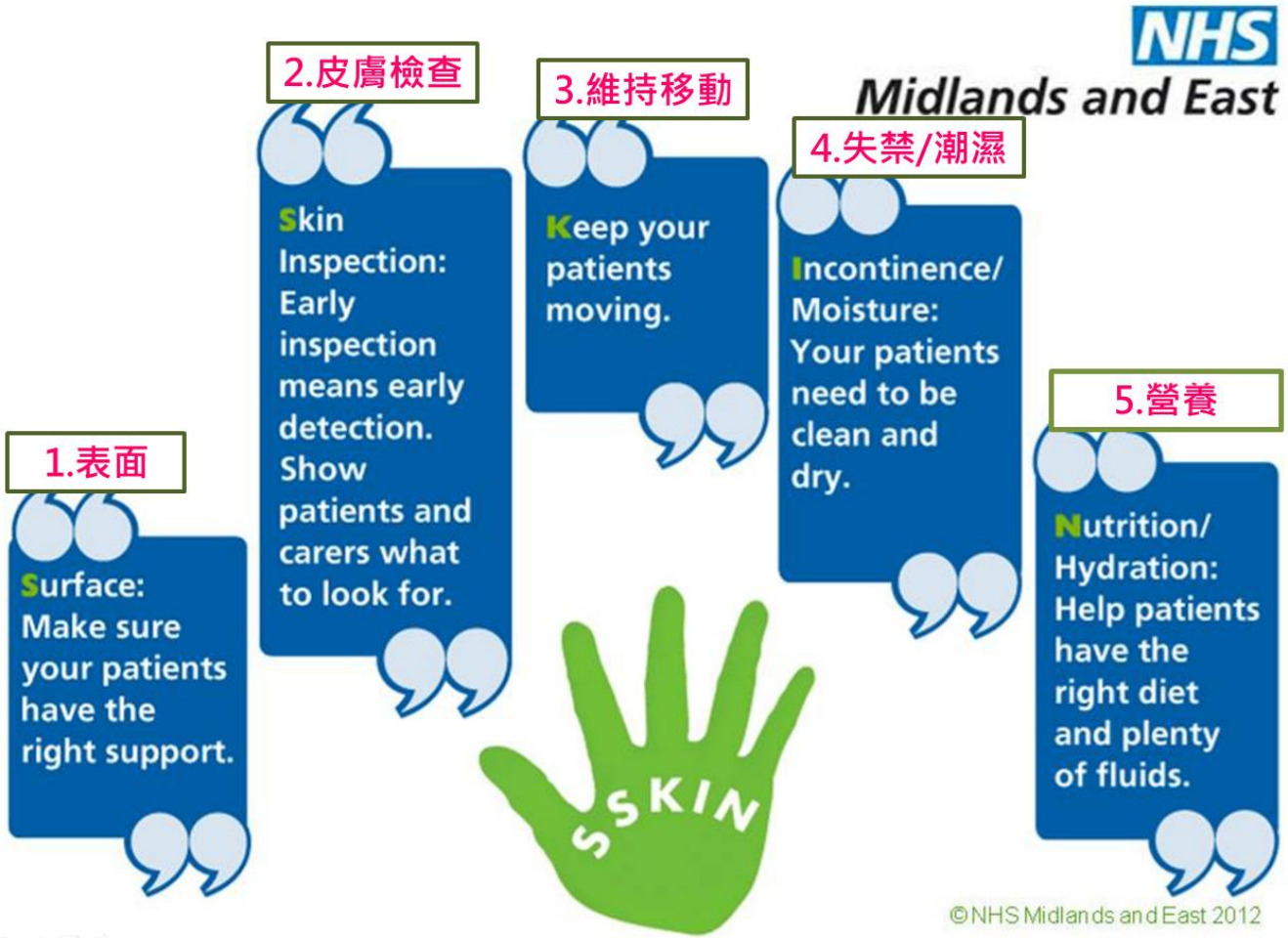


Impact Factor:1.337

背景資料 Background Knowledge



單位已在推行SSKIN Bundle，還有什麼好的策略可以預防壓瘡?

Appraisal sheets(FAITH)

Appraisal Tool

[統合分析-Meta-Analysis]

步驟1：研究探討的問題為何？ (PICO)

步驟2：研究的品質如何？ (內在效度)

步驟3：研究結果之意義為何？(效益)

步驟1: 此篇文獻研究所探討的問題為何？

P

- Pressure ulcers

I

- The different dressings with standard care protocol

C

- A standard care / Routine Care

O

- Preventing pressure ulcers

問題類型：●治療型 ○預後型 ○診斷型 ○傷害型

Appraisal sheets(FAITH)

Appraisal Tool

[統合分析-Meta-Analysis]

步驟1：研究探討的問題為何? (PICO)

步驟2：研究的品質如何? (內在效度)

〔FAITH〕

步驟3：研究結果之意義為何? (效益)

F - 研究是否找到 (Find) 所有的相關證據？

YES

METHODS

Search Strategy

To ensure inclusion of a substantial breadth and comprehensiveness of evidence, the research team worked closely with a librarian scientist to identify appropriate search terms and strategies. An electronic literature search was conducted by searching the databases PubMed, MEDLINE, EMBASE, CENTER, CBM, CNKI, WANFANG, and VIP from January 1, 1964 to December 31, 2013, using a combination of key search terms such as pressure ulcer, pressure sore, pressure injury, decubitus, bedsore, bed sore, dressing, film, hydrocolloid, foam, dermatologic agents, barriers, and glycerides. The search strategy also included hand searching of relevant journals (restricted to 12 months before the implementation of the project) and reference lists (especially systematic reviews and traditional literature reviews). Key non–peer-reviewed journals were hand searched to identify articles that would not be indexed in electronic databases.

列出關鍵字與搜尋的資料庫

Figure 1.
FLOW DIAGRAM OF INCLUDED AND EXCLUDED STUDIES

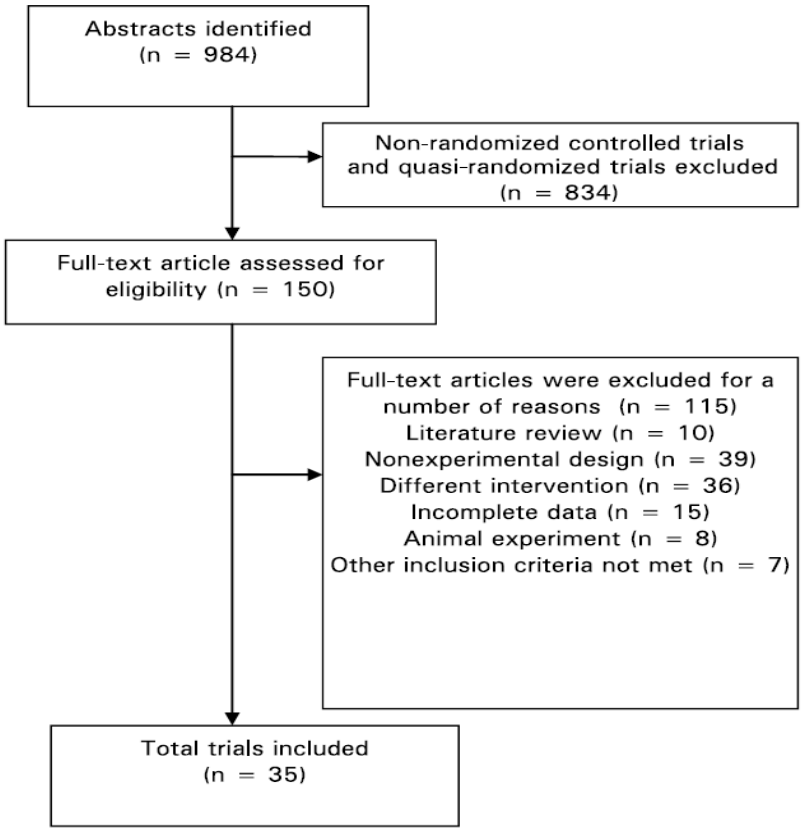
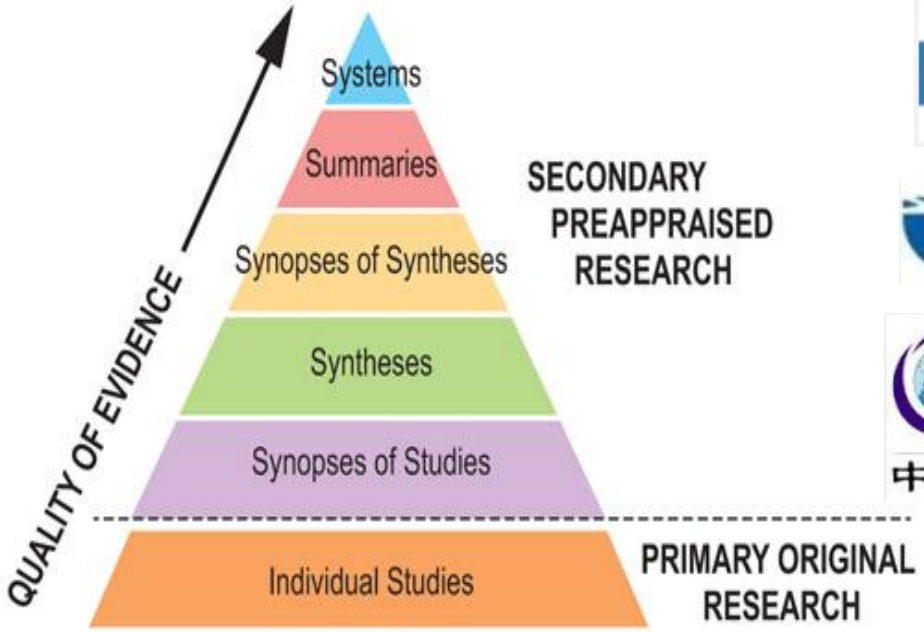


Figure 1 Flow diagram of included and excluded studies

F - 研究是否找到 (Find) 所有的相關證據？



PubMed

MEDLINE U.S. National Library of Medicine

EMBASE

CNKI中国知网 www.cnki.net 中国知识基础设施工程

VIP 维普资讯

CBM

万方数据 WANFANG DATA

文獻搜尋至少應包括二個主要的資料庫,加上文獻引用檢索,試驗登錄資料等,不只限於英文，並應同時使用MeSH字串及一般檢索詞彙(text words)。	**An electronic literature search was conducted by searching the databases PubMed, MEDLINE, EMBASE, CENTER, CBM, CNKI,WANFANG, and VIP from January 1, 1964 to December 31, 2013, using a combination of key search terms such as pressure ulcer, pressure sore, pressure injury, decubitus, bedsore, bed sore, dressing, film, hydrocolloid, foam, dermatologic agents, barriers, and glycerides. (Answer:P.268-Methods)**

評讀結果：☑是 □否□不清楚

A: 文獻是否經過嚴格評讀(Appraisal)?

評讀結果：☑是 ☐否☐不清楚

Assessment of Risk of Bias in Included Studies

The methodological quality of the included trials was assessed by a standardized critical appraisal instrument developed by the Cochrane Collaboration.[7] The tool incorporates 7 criteria to evaluate the risk of bias, and they are as follows: sequence generation, allocation concealment, blinding, incomplete outcome data addressed, free of selective outcome reporting, groups similar at baseline, and timing of outcome assessment similar in all groups. All studies included in the analysis were graded and categorized as "low risk of bias," "high risk of bias," or "unsure."

每篇文獻使用 Cochrane ROB assessment tool 進行評讀

A: 文獻是否經過嚴格評讀(Appraisal)?

評讀結果：☑是 ☐否☐不清楚

Table 2.

RISK OF BIAS OF INCLUDED TRIALS

Study	Adequate Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data Addressed	Free of Selective Reporting	Groups Similar at Baseline	Timing of Outcome Assessment Similar in All Groups
Nakagami et al (2007)[12]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Liu (2012)[20]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	High risk
Chen (2012)[21]	Unclear	Unclear	High risk	Unclear	Unclear	Low risk	Low risk
Zhuang et al (2012)[36]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Zeng (2012)[39]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Wu (2010)[34]	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Wang et al (2010)[22]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Yang et al (2011)[37]	Unclear	Unclear	High risk	Low risk	Low risk	Low risk	High risk
Nie (2012)[31]	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Lin et al (2012)[23]	High risk	High risk	Unclear	Low risk	Low risk	Low risk	Low risk
Hu et al (2012)[19]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	High risk
Zhu (2012)[33]	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Zhang et al (2012)[32]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Torra et al (2002)[9]	Low risk	Low risk	Unclear	Low risk	Low risk	Low risk	Low risk
Liu et al (2010)[38]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Hua-xiu et al (2011)[25]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Li (2012)[28]	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Wu (2012)[26]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Brindle et al (2012)[15]	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Chaiken (2012)[16]	Low risk	Low risk	Low risk	Low risk	Low risk	Unclear	Low risk
Cubit et al (2012)[17]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Ferrer et al (2013)[8]	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Santamaria et al et al (2013)[41]	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Measume et al (2005)[13]	High risk	Unclear	Low risk	Low risk	Low risk	Low risk	Low risk
Hu et al (2007)[40]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Qing et al (2011)[29]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Chiari et al (2012)[10]	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Cheng et al (2012)[30]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Imanishi et al (2006)[14]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Pan (2010)[35]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Weng (2008)[18]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Unclear
Shi (2011)[27]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Feng et al (2011)[24]	High risk	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk
Mei et al (2011)[11]	High risk	Unclear	Unclear	Low risk	Low risk	Unclear	Low risk
Tsao et al (2013)[42]	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk	Low risk

表二，列出納入的試驗研究的偏差風險。

I: 文獻是否只納入 (included) 具良好效度的文章?

Inclusion Criteria

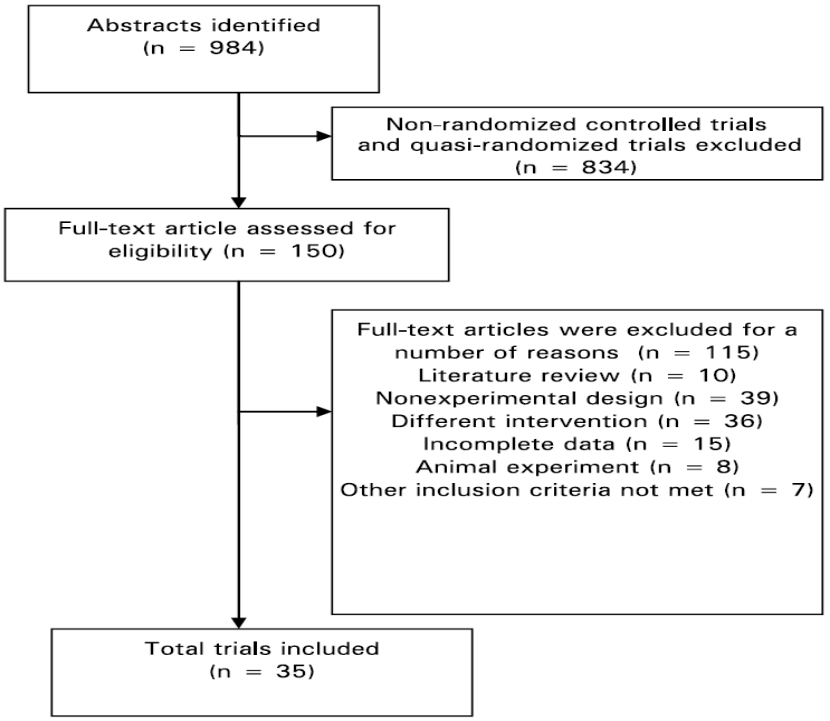
This analysis included all randomized controlled trials and quasi-randomized trials that were designed to compare the use of any topical application of dressings or skin preparation for PrU prevention. This review considered trials that included persons 18 years or older, in any care settings (eg, acute care, home care, long-term care, rehabilitation, palliative care).

Study Selection

Based on the selection criteria, 2 authors independently reviewed each title and abstract of the literature search results to determine whether the article should be included for more in-depth review. The authors obtained the full copies of all potentially relevant trials. The next stage consisted of a full-text review of each article and independent evaluation by 2 reviewers. A third reviewer was asked to resolve the conflict when there was disagreement. The third reviewer also checked all the rejected studies to validate appropriate exclusion. All reviewers had received training in meta-analysis using Cochrane methodology.

RESULTS

The search identified 984 abstracts, from which 150 relevant randomized controlled trials were selected, 115 were excluded for a variety of reasons as described in the Figure 1. The analysis included 35 eligible randomized trials,[8–42] with a total of 5401 study participants as detailed in Table 1.



評讀結果：☑是 ☐否☐不清楚

T-作者是否以表格和圖表「總結」(total up) 試驗結果?

YES

Table 3.

RESULTS OF ANALYSES: PRU INCIDENCES

Comparison	No. of Trials (Authors)	Participants	Relative Risk (95% Confidence Interval)	*P*
Hydrocolloid dressings vs standard care protocol—patients at risk of PrU	7 (Nakagami et al,[12] Liu,[20] Chen,[21] Zhuang et al,[36] Zeng,[39] Feng et al,[24] Tsao et al[42])	494	0.20 (0.12–0.36)	<.001
Hydrocolloid dressings vs standard care protocol—patients undergoing NIPPV	10 (Wu et al,[34] Wang et al,[22] Yang et al,[37] Nie,[31] Lin et al,[23] Hu et al,[19] Zhu,[33] Zhang et al,[32] Weng,[18] Mei et al[11])	877	0.30 (0.18–0.52)	<.001
Foam dressings vs standard care protocol—patients at risk of PrU	11 (Feng et al,[24] Tsao et al,[42] Torra et al,[9] Liu et al,[38] Hua-xiu et al,[25] Li,[28] Brindle et al,[15], Chaiken,[16] Cubit et al,[17] Ferrer et al,[8] Santamaria et al[41])	2090	0.17 (0.12–0.26)	<.001
Foam dressings vs standard care protocol—patients undergoing NIPPV	2 (Wu,[26] Mei et al[11])	126	0.13 (0.05–0.16)	<.001
Corpitolinol 60 vs standard care protocol—nonsurgical patients	4 (Meaume et al,[13] Hu et al,[40] QingLi et al,[29] Cheng et al[30])	1390	0.42 (0.16–1.10)	<.001
Corpitolinol 60 vs standard care protocol—in surgical patients	1 (Chiari et al[10])	298	1.73 (1.08–2.76)	>.05
Film dressings vs standard care protocol	3 (Imanishi et al,[14] Pan,[35] Weng[18])	307	0.50 (0.32–0.76)	.001
Foam dressings vs hydrocolloid dressings	4 (Shi[27], Feng et al,[24] Mei et al,[11] Tsao et al[42])	467	0.16 (0.07–0.38)	<.001

表三，列出各種不同敷料對預防壓瘡的結果

評讀結果：☑是☐否☐不清楚

H-試驗的結果是否相近-異質性 (Heterogeneity)?

YES

Hydrocolloid Compared with Standard/Routine Care

Seventeen trials compared the use of hydrocolloid dressing with standard of care (no hydrocolloid dressing) in general hospitalized patients who were at risk of PrUs and patients undergoing noninvasive positive-pressure ventilation (NIPPV). The 7 trials[12,20,21,24,36,39,42] that investigated general hospitalized patients were pooled using a fixed-effects model ($I^2 = 0\%$, $\chi^2_5 = 2.65$, $P = .75$). There was a significant reduction in PrU development favoring hydrocolloid dressings (RR, 0.20; 95% CI, 0.12–0.36).

The 10 remaining trials[11,18,19,22,23,31–34,37] that evaluated patients undergoing NIPPV were pooled. A random-effects model was used because of heterogeneity ($I^2 = 57\%$, $\chi^2_9 = 21.03$, $P = .01$). Patients undergoing NIPPV and randomized to the hydrocolloid group developed fewer PrUs (RR, 0.30; 95% CI, 0.18–0.52).

評讀結果：☑是□否□不清楚

H-試驗的結果是否相近-異質性 (Heterogeneity)?

YES

Corpitolinol 60 Compared with Standard Care

Four trials[13,29,30,40] compared corpitolinol 60 with standard care in older-adult hospitalized patients. There was no significant difference between the 2 groups (RR, 0.42; 95% CI, 0.16–1.10). One trial evaluated corpitolinol 60 for the prevention of PrUs in surgical patients. There were more PrUs among patients who were randomized to corpitolinol 60 versus standard care (RR, 1.73; 95% CI, 1.08–2.76).[10]

Film Compared with Standard Care

Data from 3 trials[14,18,35] comparing film dressings with standard care were pooled using a fixed-effects model ($I^2 = 23\%$, $\chi^2_2 = 2.61$, $P = .27$) for analysis. There was a significant reduction in PrU incidence among participants who were assigned to film dressing applications (RR, 0.50; 95% CI, 0.32–0.76).

評讀結果：☑是☐否☐不清楚

Foam Compared with Hydrocolloid

Four trials[11,24,27,42] evaluating the use of foam dressings and hydrocolloid dressings were pooled by using a fixed-effects model. There were significantly fewer PrUs among those allocated to foam dressings (RR, 0.16; 95% CI, 0.07–0.38).

Appraisal sheets(FAITH)

Appraisal Tool

[統合分析-Meta-Analysis]

步驟1：研究探討的問題為何? (PICO)

步驟2：研究的品質如何? (內在效度)

〔 FAITH 〕

步驟3：研究結果之意義為何?(效益)

結果為何?使用何種評估方式,療效有多大(是否來自隨機效果)?

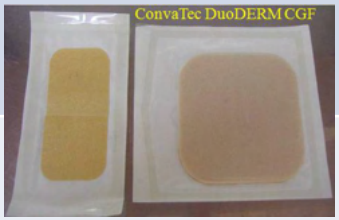
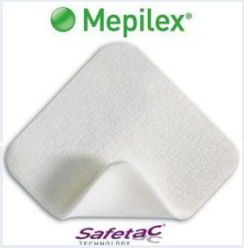
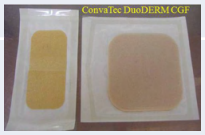
1.某些研究數據是否由廠商提供，此結果可能有部分直接或間接的影響。
2.某些變項未予控制，如：年齡、合併症、藥物治療、住院天數、等等，可能影響結果。
3.某些研究，實驗期或觀察期較短。
4.本篇中大多數研究未提及風險評估(無法確定實驗組與對照組是否有相同危險因子)。
5.敷料的選擇包含許多因素，如密合性、舒適性、使用時間、價格。
6.雖使用敷料，仍應合併翻身、擺位、皮膚護理、營養支持等。

討論(Discussion)

壓傷(Pressure injury)

2016年4月13日，美國國家壓瘡諮詢委員會（NPUAP）宣布將常用的『壓瘡pressure ulcer』這個字**改名為『壓傷pressure injury』**，因為有些壓瘡如第一度壓瘡及深層組織傷害deep tissue injury其皮膚是完整的。此外在此會議中也決議**使用阿拉伯數字來命名第1-4期**，而不再使用羅馬數字的第I-IV期。

詳見
http://www.npuap.org/resources/educational-and-clinical-resources/npuap-pressure-injury-stages/

項目	商品	研究結果	使用價錢
1.親水性敷料Hydrocolloid與常規照護相較→用於 PrU	Duoderm 	有效	10*10 cm 厚:131元 薄:58元
2.親水性敷料Hydrocolloid與常規照護相較→用於 NIPPV	Duoderm	有效	10*10 cm 厚:131元 薄:58元
3.泡棉敷料Foam與常規照護相較→用於 PrU	Mepilex 	有效	10*10 cm 131元
4. 泡棉敷料Foam與常規照護相較→用於 NIPPV	Mepilex	有效	10*10 cm 131元
5. corpitolinol 60與常規照護相較→用於非外科病患PrU	賽膚潤 液體敷料 	有效	20ml 約440元
6. corpitolinol 60與常規照護相較→用於外科病患PrU	賽膚潤 液體敷料	無效	20ml 約440元
7.透明薄膜Film與常規照護相較→用於 PrU	tegaderm 	有效	大:10元/片 小:3元/片
8.泡棉敷料Foam與親水性敷料Hydrocolloid相較→用於 PrU	tegaderm Duoderm 	都有效	10*10 cm 厚:131元 薄:58元

Q & A 討論交流時間

- Evidence (用GRADE評分系統)
  - 此篇文章:考慮影響證據品質的升降級因素，大家會給此篇
    證據品質(指對觀察值的真實性有多大把握)
    分級：高(A)、中(B)、低(C)、極低(D)
  - 建議強度(指建議被實施後帶來的利益及風險)
    分級：強(1)-明確顯示介入措施利大於弊或弊大於利
    弱(2)-利弊不確定或無論品質高低的證據均顯示利弊相當
- Expertise
  - ICU專責主治醫師
  - 整形外科醫師、專科護理師
  - 傷口造口專科護理師
- Expectations
  - 如何才能有效的降低內科加護病房壓瘡發生率?
  - 此篇Dressings for Preventing Pressure Ulcers: A Meta-analysis結果可應用於ICU-1嗎?

本篇的GRADE分數仍維持或降級？

- Evidence
  - GRADE評分系統：高(A)、中(B)、低(C)、極低(D
  - 考慮影響證據品質的升降級因素，此篇文獻的證據等級是否需降級?

- 不降級：6人
- 降一級： 34人
- 降二級： 3人

這篇文獻的實證證據可以用於本院病人嗎?

壓瘡危險因子評估量表 (Braden Scale) ≤18分 (壓瘡高危險病人)，是否建議病人使用敷料預防壓傷?

- 建議：8人
- 需再評估： 22人
- 不建議： 6人

謝謝聆聽