REVIEW

Summary of Evidence for Wound Care in Patients With Granulomatous Lobular Mastitis

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Keywords: granulomatous lobular mastitis, wound care, nursing

ABSTRACT

Background: Granulomatous lobular mastitis (GLM) is a chronic inflammatory breast disease with poorly understood etiology. Current wound management lacks standardized protocols, highlighting the need for evidence synthesis to inform clinical decision-making.

Objectives: To comprehensively search the relevant literature on wound treatment and nursing in patients with granulomatous lobular mastitis at home and abroad, to sort out and analyze the included literature, and to extract, sort out and integrate the items of wound-related interventions, so as to provide a framework and basis for the construction of breast wound care programs for patients with granulomatous lobular mastitis.

Methods: We conducted a Descriptive literature review following the 6S evidence pyramid model (Jan 2023 version). Twelve databases were searched from inception to January 2025, including: BMJ Best Practice, Up to Date, The Journal of the American Medical Association (JAMA), Scottish Intercollegiate Guidelines Network (SIGN), CNKI, Wan fang, CBM. Inclusion criteria covered clinical studies and guidelines addressing GLM wound care. Two reviewers independently performed quality assessment using AMSTAR-2 (for reviews) and JBI tools (for primary studies), with evidence graded (Level 1-5) and recommendations categorized (Grade A/B).

Results: From 1,333 screened records, 19 studies met inclusion criteria:3 systematic reviews,3 consensus guidelines,6 RCTs,6 quasi-experimental studies,1 cohort study. Key findings were synthesized into 38 evidence statements across four domains: Assessment (8 items): Recommended use of GMDAI for inflammatory activity monitoring, Wound care (20 items): Strong evidence (Grade A) for TCM patching in chronic phases. Education (5 items): Structured self-care programs reduced recurrence by 30%. Follow-up (5 items): Combined digital and clinic follow-ups improved compliance.

Conclusion: This study summarized the evidence of wound care for GLM patients through evidence-based nursing methods, and provided evidence support for the clinical formulation of breast wound care programs for GLM patients. Healthcare professionals can apply evidence to the clinic based on the clinical context to improve breast wounds and quality of life.

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What do we already know about this topic?
Granulomatous lobular mastitis is a benign inflammatory chronic disease, and its etiology and pathogenesis are still unknown. In most patients, a breast mass develops into a breast abscess, which is often necrotic tissue in the center of the abscess that is not easily suctioned. In addition to common local symptoms such as breast lumps and abscesses, patients with granulomatous lobular mastitis sometimes have other systemic symptoms such as erythema nodosum, fever, rash, joint swelling, and cough in both lower limbs. At present, there is no unified and standard management model for the management of breast wounds, and front-line clinical nurses mostly implement nursing measures for wounds based on experience, but the clinical effects are different. Therefore, how to promote wound healing better and faster and reduce the recurrence rate is a huge challenge faced by clinical medical staff.
What is the main contribution to Evidence-Based Practice from this article?
In this study, we systematically searched the literature related to GLM wounds at home and abroad through evidence-based nursing methods, evaluated the quality, analyzed and summarized the evidence of wound nursing in patients with granulomatous lobular mastitis. This study provides a basis for constructing the best clinical care plan for the wound of patients with granulomatous lobular mastitis, and lays a foundation for more standardized and scientific management of the wound of patients with granulomatous lobular mastitis.
What are this research's implications towards health policy?
Based on the results of this study, at the practical level, we can develop standardized clinical procedures for wound care for patients with granulomatous lobular mastitis, develop patient education tools, and design a dedicated manual for patients with granulomatous lobular mastitis in the future. At the policy level, we can establish granulomatous lobular mastitis wound care centers to receive patients with chronic granulomatous lobular mastitis wounds, and we can also promote the scope of innovative dressings covered by medical insurance, and call for the inclusion of anti-biofilm dressings in the reimbursement list of medical insurance to reduce the financial burden of patients.**Authors' Contributions Statement:**
Y.T.W. designed the study, analyzed the data, and wrote the manuscript; X.L.S. collected the data; C.L.Z. provided methodological oversight; A.L. revised the manuscript critically for important content.

1 Background

Granulomatous lobular mastitis disease (GLM)is a benign inflammatory chronic disease, the etiology and pathogenesis of which are still unknown, and the increased autoimmune response is one of the causes of breast granuloma formation (Zhang & Hu & Zhao,2021). Studies (Coombe & Hamed,2021) have pointed out that the breast can cause local inflammation when exposed to chemical irritation, hormonal changes, infection, or local trauma, and at the same time, the secretion of the damaged milk duct will come into contact with the connective tissue of the breast lobules, induce lymphocyte and macrophage migration, and eventually form granulomatous tissue. There is still a possibility of recurrence may persist until the secretions in the milk duct are cleared, and the recurrence rate can be as high as 15.4% to 24.8% after wound treatment （Barreto & Sedgwick & Nagi,2018;Llancari & Ortiz &Becerra,2023）.In most patients, a breast mass develops into a breast abscess, which is often a necrotic tissue that is not easily aspirated in the central area of the abscess, so patients often experience severe pain when the wound abscess is punctured and drained （Freeman & Xia & Wilson,2017）.
In addition to the usual local symptoms such as breast lumps and abscesses, GLM can sometimes present with other systemic symptoms such as erythema nodosum, fever, rash, swollen joints, and cough in both lower extremities（Yaghan et al.2020）. GLM so-called 'cancer in inflammation' because of its long course of disease, complex and variable disease, and the formation of persistent wounds after abscess rupture（Yılmaz & Kaya &Demirel，2021）. On the other hand, studies （Shojae et al.,2021, Wolfrum, et al.,2018） have shown that some patients who have undergone lesionectomy have the same exudate of pus and necrotic tissue from the breast wound or puncture, which can also form a chronic wound that is difficult to heal over time, and the lesion can occur in any quadrant

of the breast, but usually radially from the area behind the areola. To ensure complete resection and reduce recurrence, some surgical approaches may require excision of the inflammatory mass along with adjacent affected skin, ducts, and even normal breast tissue, which is seriously damaging to the breast, causing local breast defects, and it is difficult to compromising breast aesthetics, particularly for young women (Yu &Wang,2020; Zhang, et al.,2019) . In addition, because the current management of breast wounds has not formed a unified and standard management model, clinical nurses mostly implement nursing measures for wounds based on experience, but the clinical effects are different. Therefore, promoting GLM wound healing, reducing the recurrence rate, and effectively alleviating the psychological burden of GLM wound patients are the focus of clinical work, and they are also a significant challenge faced by clinical medical staff. Therefore, this study summarizes the evidence items for wound care in GLM patients and provides evidence support for the clinical formulation of breast wound care programs for GLM patients.

2 Methods

2.1 Literature search

2.1.1 Establish an evidence-based panel and identify evidence-based issues

First, an evidence-based team was established, including 2 nursing management experts, 2 breast specialists, and 3 nursing researchers. Construct evidence-based questions using the PIPOST model. P (Population) granulomatous lobular mastitis wound patients; I (Intervention) and granulomatous lobular mastitis wound treatment and nursing related measures; P (Professional) Nursing Staff, Doctors, Community Medical Staff; O (Outcome) outcomes, O1 patient outcomes: wound healing rate, wound healing time, wound recurrence rate, changes in wound inflammatory activity, and satisfaction with nursing; O2 Caregivers, Physicians and Community Health Workers Outcomes: self-efficacy and attitude towards wound treatment and care, awareness of wound treatment and care options, and job satisfaction; O3 system outcomes: improvement and effectiveness of GLM wound treatment and nursing; S (Setting): Evidence application site: ward, outpatient clinic, community medical institution; Type of Study (T): clinical decision-making, guidelines, expert consensus, systematic review, primary study. This study is a systematic review of guidelines, consensus statements, and primary research, conducted following the PRISMA framework.

2.1.2 Databases

According to the "6S" pyramid evidence model, the evidence was retrieved from top to bottom. The English-language databases searched included BMJ Best Practice, Up to Date, The Journal of the American Medical Association (JAMA), and the Scottish Intercollegiate Guidelines Network (SIGN), The Cochrane Library, Ovid, Web of Science, PubMed, SpringerLink, ScienceDirect, JBI Evidence-Based Health Care Repository, ACP Club. Chinese databases include: China Medical Pulse Guide Network, China National Knowledge Network, Wanfang, VIP, China Biomedical Literature Database. The search was conducted using a combination of subject headings and free words.

2.1.3 Search terms

Chinese search terms include: "granulomatous lobular mastitis/idiopathic granulomatous mastitis/granulomatous mastitis/non-lactating mastitis",
"wound/wound/surgery/postoperative wound/ulcer/abscess/mass", "continuous nursing/follow-up/nursing/management/out-of-hospital rehabilitation/Internet nursing".

Search terms in English include: "Granulomatous Lobular Mastitis/Idiopathic Granulomatous Mastitis/Granulomatous Mastitis/Non-Lactating Mastitis". “Wound/Ulcer/Postoperative Wound/Abscess/Surgery/ Open Wound”, “Continuous Care/Follow-up/Nursing/Management/Out-of-Hospital Rehabilitation/Internet”.

The Chinese database takes CNKI as an example:("granulomatous lobular mastitis" OR “idiopathic granulomatous mastitis” OR “granulomatous mastitis” OR "non-lactating mastitis") AND (“wounds” OR “ulcer” OR “postoperative wound” OR “abscess” OR “mass” OR “surgery” OR “wound”) AND (“Continuity of Care” OR “Follow-up” OR “Care” OR “Management” OR “Out-of-Hospital Rehabilitation” OR “Internet nursing”).

English database format, take PubMed as an example: (((((Granulomatous Lobular Mastitis) OR (Idiopathic Granulomatous Mastitis)) OR (Granulomatous Mastitis)) OR (non-Lactating Mastitis)) AND ((((((Wound) OR (Ulcer)) OR (Postoperative Wound)) OR (Abscess)) OR (Mass)) OR (Surgery)) OR (Raw Surface))) AND ((((((Continuing Care) OR (Follow-up)) OR (Nursing)) OR (Management)) OR (Out-of-Hospital Rehabilitation)) OR (Internet)).

2.1.4 Time limit for search

The search period covered records from database inception to January 31, 2023.

2.1.5 Literature inclusion and exclusion criteria

Inclusion criteria: (1) Domestic and foreign literature on the treatment and nursing management of GLM wounds. (2) Literature types may include clinical decision-making, systematic reviews, guidelines, expert consensus, original research. (3) The subjects of the literature were adults, aged ⩾18 years. (4) Literature language: English, Chinese.

Exclusion criteria: (1) Translation and interpretation of the guidelines. (2) Proposals, drafts, reports, abstracts, and duplicate publications. (3) The full text is not available.

2.2 Evaluation of the literature

2.2.1 Literature quality evaluation criteria

AMSTAR 2(Zhang et al.,2018)（A Measure Tool to Assess Systematic Reviews-2）was used in this study to assess the quality of systematic reviews. AMSTAR 2 was formed in 2017 by experts in clinical epidemiology and evidence-based medicine from research institutions in the Netherlands and Canada based on the first version of AMSTAR, which contains a total of 16 items. According to the degree of compliance with the evaluation criteria, the evaluation options are "yes", " partially yes" and "no". If it is fully compliant, the evaluation option is "Yes"; If it partially matches, the evaluation option is "Partially Yes"; When it does not meet the requirements, it is evaluated as "no". According to the number of items satisfied, it is divided into four levels: high, medium, low and very low, (1) high: none of them or some only have one non-key item that is not satisfied; (2) Medium: more than 1 non-key item is not satisfied; (3) Low: There is only one key item that is not satisfied, or there is no non-key item that is not satisfied; (4) Very low: more than 1 key item is not satisfied, or not accompanied by non-key item is not satisfied. Other types of literature were evaluated using the corresponding literature quality assessment tool of the JBI Centre for Evidence-Based Health Care in Australia (Gu et al., 2018; Zhou et al., 2018a, 2018b, 2024). Two evidence-based practice-trained nursing graduate students independently appraised literature. Discrepancies were adjudicated by an evidence-based nursing expert through consensus discussion

2.2.2 Summary of evidence

The research members first conducted a content analysis of the included literature and compiled and summarized the relevant

evidence. This study adhered to the principles of prioritizing evidence-based, high-quality, and most recently published literature. Two nursing postgraduate students trained in evidence-based research methods independently extracted data, including publication source, study theme, article type, and publication date. When conducting evidence summary analysis, when there are inconsistencies in the conclusions of evidence from different data sources, evidence-based retrieval evidence, high-level evidence will be given priority, and if the evidence level is the same, the latest published evidence will be given priority.

2.2.3 Level of evidence and recommendation

After the extraction of evidence items, the JBI Evidence-Based Health Care Center's evidence pre-grading system (2014 edition) was first used (Wang &Hu ,2015) . The included evidence was graded and divided into Levels1~5 levels, of which Level1 was the highest level and Level 5 was the lowest level. The recommendation level of the evidence was determined according to the JBI Evidence Recommendation Level System (2014 Edition), which was divided into A recommendation (strong recommendation) and B recommendation (weak recommendation). The quality of all studies was independently evaluated by two researchers, and if there was any disagreement, it was resolved by consulting a third investigator.

3 Results

3.1 General information of the included literature

Literature screening results: Nineteen articles were included in this study, including 3 systematic reviews (Fattahi et al., 2023; Godazandeh et al., 2021; Martinez-Ramos et al., 2019) and 3 expert consensus(Liu et al, 2022; Zhang et al., 2021; Anonymous, 2022).6 randomized controlled studies (Çetin et al.,2019; Dokcu et al.,2022; Hu et al.,2020; Deng et al.,2022; Liu et al.,2020; Zuo et al.,2021) and 6 quasi-experimental studies (Bao, 2022; Chu et al., 2021; Han et al., 2022; Shi & Zeng, 2019; Yin et al., 2022; Zheng et al., 2023). 1 cohort study(Wang， 2021). the literature screening process is shown in Figure 1, and the basic information of the included literature is shown in Table 1.

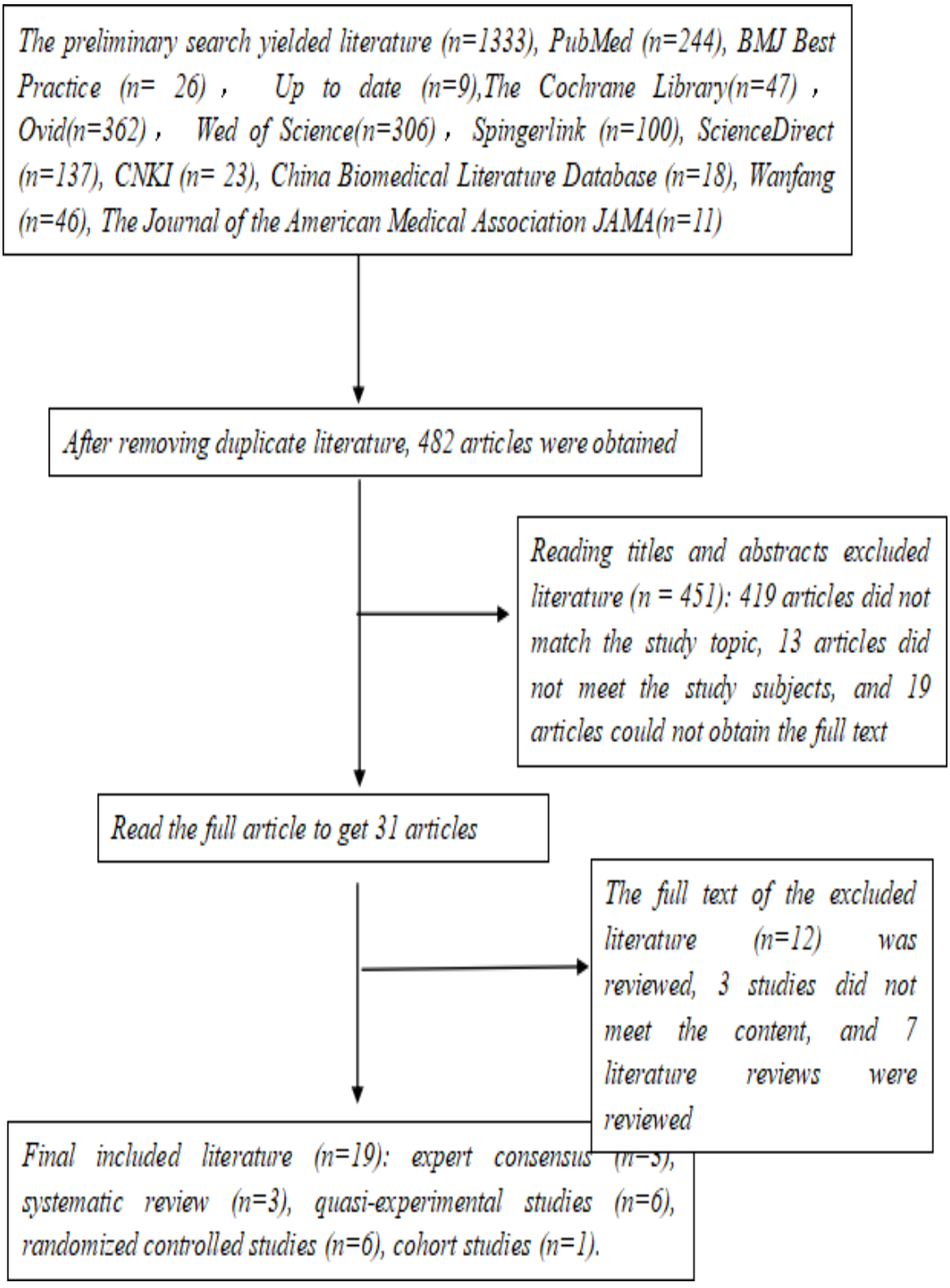
The preliminary search yielded literature (n=1333), PubMed (n=244), BMJ Best Practice (n= 26), Up to date (n=9),The Cochrane Library(n=47), Ovid(n=362), Wed of Science(n=306), Spingerlink (n=100), ScienceDirect (n=137), CNKI (n= 23), China Biomedical Literature Database (n=18), Wanfang (n=46), The Journal of the American Medical Association JAMA(n=11)
After removing duplicate literature, 482 articles were obtained
Reading titles and abstracts excluded literature (n = 451): 419 articles did not match the study topic, 13 articles did not meet the study subjects, and 19 articles could not obtain the full text
Read the full article to get 31 articles
The full text of the excluded literature (n=12) was reviewed, 3 studies did not meet the content, and 7 literature reviews were reviewed
Final included literature (n=19): expert consensus (n=3), systematic review (n=3), quasi-experimental studies (n=6), randomized controlled studies (n=6), cohort studies (n=1).

Table 1 Basic information of the included literature

Included literature	*Year of publication*	*Literature sources*	*Literature Topics*	*literature type*
Yuan Q	*2022*	*BMJ Best Practice*	*GLM's approach to management*	*expert consensus*
Zhang	*2021*	*Medical Pulse Communication*	*Traditional Chinese Medicine (TCM) of GLM*	*expert consensus*
Çetin K	*2019*	*Ovid*	*Comparison of the efficacy of different hormone administration methods in the treatment of GLM wounds*	*random Control*
Monthly subscription	*2022*	*CNKI*	*Pain intervention for patients with GLM*	*class experiments*
Yin Jia	*2022*	*Wanfang*	*Improvement in the comfort of GLM patients*	*class experiments*
Shi Qinyan	*2019*	*Wanfang*	*Care of the abscess phase of GLM*	*class experiments*
Dokcu Ş	*2022*	*PubMed*	*Repair of GLM wounds*	*random Control*
Hu T	*2020*	*Science Direct*	*Catheter lavage versus oral glucocorticoids for idiopathic GLM*	*random Control*
Han X	*2022*	*CNKI*	*The addition and subtraction of permeabilitation and external application of cradle carbuncle powder for the treatment of GLM*	*class experiments*
Zheng Yi	*2023*	*Wanfang*	*Postoperative wound healing in patients with GLM*	*class experiments*

Table 1 (Continued) Basic information of the included literature

Included literature	*Year of publication*	*Literature sources*	*Literature Topics*	*Document type*
Anonymous	*2022*	*Chinese Biomedical Literature Database*	*GLM expert Consensus on TCM Diagnosis and Treatment.*	*Expert consensus*
Godazandeh G	*2021*	*Ovid*	*Analysis of the effect of hormonal therapy in patients with idiopathic GLM wounds.*	*Systematic review*
Wang J	*2021*	*The Cochrane Library*	*Treatment and care of idiopathic GLM skin ulcers.*	*Cohort studies*
Fattahi A S	*2023*	*Up To Date*	*Factors influencing GLM wound recurrence*	*Systematic review*
Deng Y	*2022*	*Science Direct*	*Management model for patients with GLM.*	*Randomized controlled*
Martinez-Ramos D	*2019*	*Web of Science*	*Comparison of different treatments for GLM.*	*Systematic review*
Liu P Z	*2020*	*PubMed*	*A clinical study of the internal administration of draining pus decoction combined with surgery for the treatment of GLM.*	*Randomized controlled*
Chu Kaiyun	*2022*	*CNKI*	*Thorn cupping combined with traditional Chinese medicine for the treatment of GLM.*	*class experiments*
Zuo X	*2021*	*Springer Link*	*Effect of breast ductal exploration combined with Lesionectomy on GLM.*	*Randomized controlled*

3.2 Quality evaluation results of the included literature

3.2.1 Systematic reviews

Three systematic reviews were included in this review. There were 2 wound treatment papers, 1 wound recurrence factor AMSTAR2, 1 high-quality literature and 2 medium-quality literatures. Details of the results are shown in Table 2.

Table 2 Quality evaluation of the systematic review literature

Literature	AMSTAR2 entries																Quality Measure
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Godazandeh G	yes	yes	yes	yes	yes	yes	yes	yes	not	not	yes	yes	yes	yes	yes	yes	middle
Fattahi A S	yes	yes	yes	yes	yes	yes	yes	yes	yes	not	yes	yes	yes	yes	yes	yes	high
Martinez-RamosD	yes	yes	yes	yes	yes	yes	yes	Partly yes	Partly yes	not	yes	yes	yes	yes	yes	yes	middle

3.2.2 Expert consensus

A total of 3 expert consensuses were included in this study, all of which were of high quality, and the evaluation results are shown in Table 3.

Table 3 Quality evaluation of expert consensus

Literature	Entry					
	1	2	3	4	5	6
Yuan Q	yes	yes	yes	yes	yes	Yes
Zhang C J	yes	yes	yes	yes	unclear	Yes
Anonymous	Yes	yes	yes	yes	yes	yes

3.2.3 Randomized controlled studies

A total of 6 randomized controlled studies were included in this study, and the evaluation results are shown in Table 4.

Table 4 Quality evaluation of randomized controlled trials

Literature	Entry												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Çetin K	yes	yes	yes	yes	not	unclear	yes	yes	yes	yes	yes	yes	yes
Dokcu Ş	yes	yes	yes	yes	unclear	yes	yes	yes	yes	yes	yes	yes	yes
Hu T	yes	yes	yes	yes	yes	yes	not	yes	yes	yes	yes	yes	yes
Deng Y	yes	yes	yes	yes	yes	unclear	unclear	yes	yes	yes	yes	yes	yes
Liu P Z	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Zuo X	yes	yes	yes	yes	yes	not	not	yes	yes	yes	yes	yes	yes

3.2.4 Category of experimental studies

Six experimental studies were included in this study, and the evaluation results are shown in Table 5.

Table 5 Quality evaluation of experimental studies

Literature	*Entry*								
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Monthly subscription	*yes*	*yes*	*yes*	*yes*	*yes*	*unclear*	*yes*	*yes*	*yes*
Yin Jia	*yes*	*yes*	*yes*	*yes*	*not*	*not*	*yes*	*yes*	*yes*
Shi Qinyan	*yes*	*yes*	*yes*	*yes*	*not*	*not*	*yes*	*yes*	*yes*
Han Xu	*yes*	*yes*	*yes*	*yes*	*unclear*	*yes*	*yes*	*yes*	*yes*
Zheng Yi	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Chu Kaiyun	*yes*	*yes*	*yes*	*yes*	*not*	*not*	*yes*	*yes*	*yes*

3.2.5 Cohort studies

One cohort study was included in this review (Wang J& Zhang Y& Lu X, 2021) . Except for item 4 "whether confounding factors were taken into account" with the evaluation result of "no", item 5 "whether measures were taken to control confounding factors" with "no", and item 9 "whether the follow-up was complete, if not, whether the reasons were described and analyzed" with the evaluation result of "unclear", the evaluation results of all other items were "yes".

4. Synthesis of evidence

All included studies were summarized, evidence was extracted, and the strength of the recommendation was determined (Grade A: strong recommendation, Grade B: weak recommendation) to determine the evidence summary for wound care in patients with GLM. A total of 38 pieces of evidence were formed in four dimensions, including assessment, wound care, education, and follow-up, which laid the foundation for the construction of a continuous care plan, and the evidence content is shown in Table 6.

Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
1 assess	*1.1 Assess the patient's overall clinical signs and symptoms. A detailed history, findings, and other clinical signs outside the breast should be documented (Dokcu Ş & Başçeken S, 2022).*	*2c*	*Grade A*
	1.2 The M-scale is recommended to quantify the severity of breast wounds. The higher the M-score, the more severe the symptoms (Hu T& Li S,2020).	*1c*	*Grade B*
	1.3 Assess the wound area, color, texture, and elasticity of the skin around the wound, temperature, presence of sinus tracts, color of exudate, and presence of infection (Çetin et al., 2019; Han X et al.,2022).	*1c*	*Grade A*
	1.4 Measurement and calculation of wound area: cover the transparent film on the wound respectively, draw the outline with a pen, and then record the area on the graph paper. Each small cell is 1mm2. All fractions of a square should be combined (Zheng et al.,2023).	*2c*	*Grade B*
	1.5 Assessment of inflammatory activity in GLM wounds: Granulomatous lobular mastitis disease activity index (GMDAI) was used (Liu et al.,2022).	*5b*	*Grade A*
	1.6 Assess the patient for drug complications: liver impairment, obesity, moon face, nausea, vomiting, optic nerve damage, osteoporosis, femoral head necrosis, hearing loss, vision loss, hyperuricemia (Zhang et al.,2021; Hu et al.,2020).	*1c*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
	1.7 Assess the wound for local thinning of the skin, secondary infection, and hyperpigmentation. (Martinez-Ramos ,2019; Godaz-andeh G et al.,2021).	*1b*	*Grade A*
	1.8 Assess whether the patient has congenital inverted nipples, body mass index, age at menarche, long-term use of contraceptives or antipsychotics, other autoimmune diseases, mood status, and life status (Fattahi et al.,2023; Wang J et al.,2021).	*5b*	*Grade A*
2 Wound care	*2.1 Create an initial case data file: The case data file form consists of a general information data sheet, a wound information data sheet, a medication status table, and a treatment method table (Deng Y et al.,2022).*	*1c*	*Grade A*
	2.2 Management of case management files: The team leader manages the patient's abnormal laboratory test results, abnormal imaging examination results, breast wound changes, medication conditions, and whether there is recurrence (Dokcu Ş et al.,2022).	*1c*	*Grade A*
	2.3 For postoperative patients with large mastectomy, it is recommended to wear chest shaping garments (Dokcu Ş et al.,2022).	*2c*	*Grade A*
	2.4 Patients with postoperative wounds should be placed in the unaffected lateral decubitus position or supine (Dokcu Ş et al.,2022).	*2c*	*Grade A*
	2.5 For postoperative wounds with compression bandages with elastic bandages, attention should be paid to whether the elastic bandages are properly tightened, generally to accommodate one finger when the patient inhales, and observe whether the patient has dyspnea, restlessness or cold sweat and other manifestations of crush syndrome, and at the same time, attention should be paid to whether the local compressed skin has ischemia, crushing, blisters or rashes. If there is any abnormality, communicate with the doctor in time so that it can be dealt with in a timely manner (Shi et al. 2019).	*2a*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
	2.6 Pain education for patients, strengthening the management of the surrounding environment, wrist and ankle acupuncture before wound dressing, and using WHO analgesic ladder approach to reduce breast wound pain (Bao Y,2022).	*2a*	*Grade A*
	2.7 Protect the affected breast from external collisions and advise the patient to wear a loose bra (Liu et al., 2022).	*5b*	*Grade B*
	2.8 Dressings are selected based on wound area, exudate volume, exudate properties, air permeability, and adhesion of the dressing (Liu et al.,2020).	*1c*	*Grade B*
	2.9 Gauze and other non-adhesive dressings are recommended for wound binding, and the frequency of dressing change is determined according to the exudate of the wound (Wang et al.,2021).	*1c*	*Grade A*
	2.10 In order to prevent bacterial infection, if conditions permit, select silver ion antibacterial dressings to cover the wound and then cover and bandage with sterile gauze (Wang et al.,2021).	*1c*	*Grade B*
	2.11 When the necrotic tissue of the abscess cavity or sinus tract is removed, rubberized muscle ointment, Jihua ointment, and rehabilitation new liquid yarn strips should be added locally according to the doctor's instructions to promote wound healing (Zhang et al.,2021).	*5b*	*Grade A*
	2.12 Individualized care is provided according to the specific situation of the GLM wound (Liu et al., 2022).	*5b*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
	2.13 In order to reduce the swelling of the skin around the wound, you can choose traditional Chinese medicine patch therapy according to the doctor's advice. However, it is necessary to pay attention to the following five points: (1) The skin should be cleaned before the application of traditional Chinese medicine, the wound should be wiped with an povidone-iodine swab, and then rinsed with normal saline to remove the surface bacteria of the skin, and the wound should be dried before applying the treatment. (2) Accurately master the methods of preparing various drugs and the operation steps of traditional Chinese medicine patching. (3) Avoid the breach when applying traditional Chinese medicine. (4) When applying the patch therapy, observe whether the patient has allergies, and if allergic reactions occur, the drug should be stopped immediately and the attending doctor should be notified. (5) During the treatment, observe whether there is a fluctuating sensation in the swollen part of the patient's breast, and if there is a fluctuating sensation, the nurse should inform the doctor in time so that the physician can take other treatment measures (Zhang et al.,2021; Liu et al., 2022; Han et al.,2022).	*5b*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
	2.14 Traditional Chinese medicine patches are suitable for each stage of GLM wound treatment, but the corresponding drugs should be selected according to the specific conditions of the wound and the different stages of the disease (Zhang et al.,2021; Liu et al., 2022).	*5b*	*Grade A*
	2.15 In order to promote the dissipation of inflammatory stiffness in the wound, warm compress therapy can be selected according to the doctor's instructions. Including external application of Chinese decoction residue, Chinese medicine fumigation, local warm compress after heating of Chinese medicine powder, and moxibustion. Moxibustion can be used in conjunction with septal moxibustion. However, it is necessary to pay attention to the following three points: (1) Traditional Chinese medicine fumigation is suitable for wounds in the late stage of ulceration or chronic non-healing phase, and there is no broken ulcer in the mass type. (2) External application of Chinese decoction residue, moxibustion are suitable for wounds in the late stage of ulceration or postponement, where there are still inflammatory stiffness locally and there is no obvious redness and swelling on the surface skin. (3) The local temperature should be closely observed during moxibustion and moxibustion to prevent skin burns (Liu et al., 2022).	*5b*	*Grade A*
	2.16 In order to promote the discharge of pus, puncture-cupping therapy can be selected according to the doctor's advice. Needle cupping is indicated for patients in the mass stage, purulent stage, initial mass formation, or microabscess formation (Liu et al., 2022).	*5b*	*Grade B*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
	2.17 When giving the patient puncture cupping according to the doctor's instructions, keep the ambient temperature appropriate, instruct the wound patient to take the supine or lateral decubitus position, fully expose the affected breast, and strictly follow the principle of aseptic operation (Chu et al.,2021).	*2a*	*Grade B*
	2.18 Patients with mild inverted nipples can be corrected by pulling and stretching. For wounds with severe inverted nipples, patients should be given health education, informed of the dangers of inverted nipples, and promptly communicated with the physician to formulate a repair method (Dokcu Ş et al.,2022).	*2c*	*Grade B*
	2.19 During debridement, necrotic tissue and overgrown granulation tissue should be completely removed, and the principle of sterility should be strictly adhered to (Liu et al., 2022; Liu et al.,2020).	*1c*	*Grade A*
	2.20 Clean up wound secretions and wipe the skin around the wound in a timely manner to keep it clean and dry to avoid infection (Zuo et al.,2021).	*1c*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
3 educate	*3.1 Explain to the patient some of the diet, sleep and activities related to wound healing. For example: (1) Instruct patients to eat warm and light foods, increase the intake of fruits, vegetables and protein-rich foods, eat less seafood, cold, irritating, greasy and hairy foods, and avoid the intake of lactation-promoting foods (such as bamboo shoots, pig's trotters and fish soup). (2) It is recommended that patients have a regular schedule and rest, should not be overworked, and avoid staying up late. (3) Carry out more soothing fitness and health activities, such as Ba duan jin (a traditional Chinese exercise) and acupressure on Jianjing (GB21), to improve the body's immunity (Shi et al.,219; Liu et al., 2022).*	*5b*	*Grade A*
	3.2 The BMI (body mass index) was used to calculate the body mass index, and patients with a body mass index of > 28 were encouraged to perform weight management. Weight management is based on an exercise plan under the guidance of a physician, reducing the intake of high-sugar, high-fat, and high-salt foods, and developing a personalized dietary plan based on the patient's dietary preferences and disease status (Fattahi et al.,2019).	*3a*	*Grade A*
	3.3 Patients should be educated on breast self-examination techniques (Yin et al.,2022).	*2a*	*Grade A*
	3.4. Provide health education related to wound care to patients through the online platform, observe the changes of breast wound and systemic symptoms during treatment, and provide wound nursing support and disease health guidance (Deng et al.,2022).	*1c*	*Grade A*
	3.5. Introduce patients to cases of successful treatment and encourage patients to have confidence in overcoming the disease. Supportive psychotherapy can be used, and the techniques commonly used include listening, building hope, adjusting perceptions of illness, encouraging functional adaptation, and helping patients make good use of surrounding medical resources (Yin et al.,2022; Zuo X et al.,2021).	*1c*	*Grade A*

Continued Table 6 Summary of evidence for wound care in patients with GLM

Category	*Content of the evidence*	*Level of evidence*	*Recommended level*
4 Follow	*4.1 A combination of WeChat, telephone follow-up, Internet platform follow-up, and outpatient review (Deng Y, etal.,2022; Liu et al.,2020).*	*1c*	*Grade A*
	4.2 Use the network contact platform to push health education knowledge in a timely manner and track the progress of wound healing (Deng Y et al.,2022).	*1c*	*Grade A*
	4.3 During the follow-up period, the patient's general information, disease information, medication information, and treatment method data were recorded, and the case file form was improved (Deng et al.,2022).	*1c*	*Grade A*
	4.4 Advise patients not to reduce or discontinue hormonal drugs on their own (Liu et al., 2022; Wang et al.,2021).	*3c*	*Grade A*
	4.5 Closely monitor the recurrence, pay attention to the changes in the patient's psychological state, and establish a patient management system (Zhang et al.,2021).	*5b*	*Grade A*

5 Discussion

5.1 Assessment is a prerequisite for wound care for GLM patients

The treatment cycle of GLM wounds is long and recurrent, and there is no international standard for the diagnosis and treatment of GLM. For front-line nursing staff who care for a large number of GLM patients' wounds, the nursing management of GLM wounds is difficult. In order to promote the standardization process of GLM wound care plan, medical staff should first conduct a comprehensive and objective evaluation of the wound and patient when formulating the wound care plan of each GLM patient. This study systematically lists appropriate assessment tools for different assessment contents. For example, most patients with GLM have one or more of the many symptoms of pain, abscesses, cutaneous sinusoids, fever, and discharge (Zhang et al, 2023). It is difficult to describe the degree of inflammation and status of GLM wounds with a single symptom or index, while the Granulomatous Lobular Mastitis Disease Activity Index (GMDAI) integrates multiple clinical indicators, which include almost all the symptoms of the wound in GLM patients. Therefore, it is scientifically appropriate to choose GMDAI to evaluate the inflammatory activity of GLM wounds. The GMDAI not only captures disease status at specific timepoints but also quantifies inflammatory remission under treatment regimens, serving as a critical outcome measure for evaluating intervention efficacy (Xu et al., 2022). In addition to utilizing assessment tools for objective wound data, nurses should also monitor patients' subjective comfort levels before and after treatment.

5.2 Wound care is the focus of clinical work

This study provided a total of five wound care measures, including the establishment of wound case files, wound pain relief, dressing selection, appropriate techniques of traditional Chinese medicine, and wound protection. The establishment of wound case data files can enable medical staff and GLM patients to understand the progress of wound healing more intuitively. Nurses can also formulate precise treatment measures according to the

GLM patient's own wound data sheet and different stages of wound development. In some GLM patients, wounds result from breast trauma, with ulceration, exudate, swelling, and chronic pain collectively impairing comfort and quality of life. There is an expert consensus (Liu et al, 2021) that the appropriate technology of traditional Chinese medicine (TCM) nursing has demonstrated efficacy in promoting the growth of wound granulation tissue, reducing wound pain, and narrowing the scope of ulcers, and has no reported adverse drug reactions, which is suitable for GLM patients who are insensitive to antibiotics due to their personal constitution. In this study, according to the different disease periods of GLM patients, different appropriate techniques of TCM and precautions for nursing operations are listed. In the future, on the basis of a large number of literature, sufficient data mining and analysis, and expert opinions, a unified and authoritative clinical care path for side effects of topical drugs can be formulated.

5.3 Follow-up, psychological care and education should be integrated into clinical nursing work

Beyond physical care, comprehensive management requires integration of follow-up and psychosocial support. Through follow-up, clinicians can monitor wound recovery and provide personalized health guidance, thereby reducing rehospitalization rates. Health education of GLM patients should be carried out in a timely manner in clinical work to improve the self-efficacy of GLM patients, and nurses should choose appropriate education content according to the knowledge level, understanding and different stages of the disease of GLM patients. GLM patients are frequently experience depression due to the disruption of the normal appearance of the breast, and it is recommended that nurses provide multiple ways of education and support, and convey the message that there is no "rapid resolution" for GLM wounds. When people with GLM are adequately supported with care and have realistic expectations, they may be more successful in adapting to the chronic nature of the disease, thereby reducing the psychological burden. Multi-approach education and psychosocial support requires nurses to have a good knowledge base in the field of specialist diseases and psychology. In addition, nurses must have the ability to establish a sense of dependence, trust and security for GLM patients and their relatives, so as to obtain the real disease experience of GLM patients and grasp more comfort needs to ensure the smooth implementation of the continuous care plan for GLM patients.

6 Summary

These findings bridge current knowledge gaps by synthesizing evidence from multiple study designs. The evidence included in this review was derived from 19 references, including 3 systematic reviews, 3 expert consensus, 6 randomized controlled studies, 6 quasi-experimental studies, and 1 cohort study. Analysis of 38 evidence items identified four clinical themes, including assessment, follow-up, wound care, education, etc. The topic of evaluation includes 8 pieces of evidence, which mainly elaborate on the overall evaluation of GLM patients, the local evaluation of wounds, and the evaluation of drug side effects. The topic of wound care contains 20 pieces of evidence, most of which come from expert consensus and randomized controlled study articles, including the importance of establishing a wound management system, postoperative wound care measures, methods to reduce wound pain, selection of wound dressings, and appropriate TCM techniques to promote wound healing. Education contains 5 pieces of evidence that provide guidance on the psychology, diet, and behavior of patients

with GLM wounds. The follow-up consisted of five pieces of evidence that summarized the modalities, tools, incision recovery, and local or systemic side effects of follow-up. At present, most of the studies on GLM are interventional studies and retrospective studies, and there is a lack of treatment guidelines. This study only included quantitative studies in Chinese and English, and did not include qualitative research related articles, which had certain shortcomings. More prospective studies could be conducted in future studies to further refine and supplement the high-quality evidence.

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