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Comparative Clinical Evaluation of *Karpura Ghrita* Ointment and *Jatyadi Ghrita* Ointment in the Management of Post-Operative Wounds with Special Reference to Fissure-in-Ano

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Abstract: ***Background: Post-operative wound management following anorectal surgeries, particularly Fissure-in-Ano repair, presents a significant clinical challenge due to the risk of pain, delayed healing, secondary infection, and poor patient compliance with dressing protocols. Classical Ayurvedic formulations have long been recognised for their wound-healing (Vrana Ropana) and cleansing (Vrana Shodhana) properties. Karpura Ghrita and Jatyadi Ghrita are two such preparations cited in Bhaishajya Ratnavali with established utility in post-operative wound care.***
Aim: To compare the clinical efficacy of Karpura Ghrita ointment versus Jatyadi Ghrita ointment in the management of post-operative wounds with special reference to Fissure-in-Ano.
Methods: A prospective, randomised, parallel-group, open-label comparative clinical trial was conducted at the University Ayurved Hospital, Jodhpur (CTRI/2024/07/0710491). Forty patients aged 15-65 years with post-operative wounds following Fissure-in-Ano surgery were randomly allocated into two equal groups: Group A (n=20) received topical Karpura Ghrita ointment and Group B (n=20) received Jatyadi Ghrita ointment. Both interventions were applied locally for 7 days, followed by a 7-day follow-up. Outcome parameters included Pain (VAS), Burning Sensation, and Tenderness, each graded on a 0-3 ordinal scale. Statistical analysis was performed using the Mann-Whitney test (two-tailed) with GraphPad InStat 3.0.
Results: Both formulations demonstrated statistically highly significant improvements in all outcome parameters (p=0.001). Group A (Karpura Ghrita) achieved 80.15%, 79.86%, and 79.85% relief in Pain, Burning Sensation, and Tenderness respectively. Group B (Jatyadi Ghrita) achieved 70.42%, 70.93%, and 70.89% relief in the corresponding parameters. Karpura Ghrita exhibited superior symptomatic relief compared to Jatyadi Ghrita across all assessed parameters.
Conclusion: Both Karpura Ghrita and Jatyadi Ghrita are safe and effective topical Ayurvedic formulations for post-operative wound management following Fissure-in-Ano surgery. Karpura Ghrita demonstrated superior rapid symptomatic relief, while Jatyadi Ghrita offers broader wound-cleansing and tissue-regenerative benefits. Their integration into post-operative anorectal wound care protocols is recommended.
Keywords: Karpura Ghrita; Jatyadi Ghrita; Fissure-in-Ano; Parikartika; Vrana Ropana; post-operative wound healing; Ayurvedic surgery; Shalya Tantra

I. INTRODUCTION

Fissure-in-Ano is a common, debilitating anorectal condition characterised by a linear tear or ulceration of the anoderm, predominantly occurring at the posterior midline of the anal canal. It presents with severe cutting pain during and after defecation, often accompanied by bright red bleeding, burning sensation, and involuntary sphincter spasm. The condition is strongly correlated with elevated internal anal sphincter (IAS) tone, local ischaemia, and constipation. Global prevalence studies indicate Fissure-in-Ano affects approximately 1 in 350 individuals at some point in their lifetime, with equal distribution across sexes and highest incidence in middle-aged adults[1]. Surgical management of chronic Fissure-in-Ano, predominantly via Lateral Internal Sphincterotomy (LIS) or fissurectomy, resolves the underlying sphincter hypertonia and removes unhealthy tissue; however, the resulting post-operative wound invariably demands meticulous local care to prevent secondary infection, reduce pain, and accelerate healing.

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Contemporary post-operative wound management employs topical agents such as 2% Diltiazem hydrochloride gel, Glyceryl Trinitrate (GTN) ointment, or 2% lignocaine, which primarily aim at symptom palliation rather than active tissue regeneration[2,3]. There remains a significant need for agents that simultaneously provide analgesia, antisepsis, and tissue-regenerative properties.

In Ayurveda, the condition is described as *Parikartika*, defined as intense cutting pain in the anal region, arising from vitiated *Apana Vayu* aggravated by *Pitta dosha*. Classical Ayurvedic scholars including *Acharya Sushruta*, *Charaka*, and *Vagbhata* describe post-operative wounds (*Shastra Kshata Vrana*) as *Sadya Vrana*, acute wounds requiring both *Shodhana* (cleansing) and *Ropana* (healing) management[4,5]. Ghrita-based (medicated clarified butter) formulations are traditionally employed for this purpose due to their lipophilic drug-carrier properties, tissue-nourishing *Snigdha* qualities, and inherent *Vata-Pitta Shamaka* (dosha-pacifying) activity.

Karpura Ghrita, described in *Bhaishajya Ratnavali* (48th chapter), combines *Karpura (Cinnamomum camphora)* with *Shatadhauta Ghrita* (ghee washed 100 times) and is indicated specifically for *Shastra Kshata*, surgically created wounds, to prevent pain (*Vyatha*), suppuration (*Paaka*), and to accelerate healing (*Samprarohati*)[6]. *Jatyadi Ghrita*, a well-established polyherbal formulation containing *Jati (Jasminum officinale), Nimba (Azadirachta indica), Haridra (Curcuma longa), Daruharidra (Berberis aristata), Manjistha (Rubia cordifolia), Sariva (Hemidesmus indicus), Karanja (Pongamia pinnata), Tutha (copper sulphate),* and *Go Ghrita* (cow's ghee), is prescribed in the same text for *Vrana Shodhana* and *Ropana*[6,7]. Despite both formulations being widely used in clinical practice, no published randomised trial has compared their relative efficacy in post-operative anorectal wounds.

This study was therefore undertaken to generate evidence-based comparative data on the clinical efficacy and safety of these two classical formulations in managing post-operative wounds following Fissure-in-Ano surgery, and to identify their optimal clinical indications.

II. MATERIALS AND METHODS

A. Study Design

This was a prospective, randomised, open-label, parallel-group comparative clinical trial conducted at the P.G. Department of *Shalya Tantra*, University Ayurved Hospital (Sanjeevani Hospital), Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur, Rajasthan, India. The trial was registered with the Clinical Trials Registry of India (CTRI) under the registration number CTRI/2024/07/0710491 and was approved by the Institutional Ethics Committee vide letter no. DSRRAU/PGIA/IEC/22-23/634. The study was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice (GCP) guidelines.

B. Sample Size and Randomisation

A total of 40 patients fulfilling the eligibility criteria were enrolled. Randomisation was performed using the "other" method as declared in the CTRI registration. Patients were allocated in a 1:1 ratio into two parallel groups: Group A (*Karpura Ghrita* ointment, n=20) and Group B (*Jatyadi Ghrita* ointment, n=20). Written informed consent was obtained from all participants prior to enrolment.

C. Eligibility Criteria

Inclusion Criteria:

- Patients aged 15 to 65 years of either gender
- Clinically diagnosed with Fissure-in-Ano and presenting with post-operative wound following surgical intervention
- Willing to provide written informed consent
- Patients attending the OPD/IPD of the *Shalya Tantra* Department

Exclusion Criteria:

- Known or suspected malignancy of the anorectal region
- Active tuberculosis or immunocompromised states
- HIV positive or Hepatitis B surface antigen positive
- Uncontrolled systemic disorders: Hypertension, Type 2 Diabetes Mellitus
- Known hypersensitivity to any component of the trial formulations

Withdrawal Criteria:

- Patients developing hypersensitivity or allergic reactions to the trial medications
- Non-cooperative patients unwilling to continue treatment

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D. Pre-treatment Investigations

All enrolled patients underwent the following baseline investigations prior to commencement of treatment: Complete Blood Count (CBC), Bleeding Time (BT), Clotting Time (CT), Erythrocyte Sedimentation Rate (ESR), Random Blood Sugar (RBS), Pus Culture sensitivity, HIV serology, Hepatitis B surface antigen (HBsAg), and VDRL.

E. Drug Preparation

1) Karpura Ghrita Ointment (Group A)

Karpura Ghrita was prepared using the trituration (Peshana) method prescribed for *Malhar Kalpana*. The formulation comprised *Karpura* (Cinnamomum camphora L. resin, 10 g) and *Shatadhauta Ghrita* (100-times washed cow's ghee, 40 g) in a 1:4 ratio. *Shatadhauta Ghrita* was prepared by repeatedly washing purified cow's ghee 100 times with distilled water in a copper vessel using manual trituration for 5-8 minutes per wash cycle, decanting water after each wash. The final *Shatadhauta Ghrita* was triturated with standardised fine *Karpura churna* until a smooth, homogeneous ointment of optimal consistency was obtained. The prepared ointment was sterilised, filled in aluminium tubes (10 g each), sealed, labelled, and standardised prior to clinical use.

2) Jatyadi Ghrita Ointment (Group B)

Jatyadi Ghrita was prepared following the classical *Snehapaka Vidhi* as described in *Sushruta Samhita, Chikitsa Sthana*, Chapter 31 (*Snehopayogika Chikitsa Adhyaya*) in the proportion of 1:4:16 (*Jatipatradi Dravyas*: *Go Ghrita*: Water). A decoction (*Kwatha*) was prepared by boiling *Jatipatradi Dravyas* (1 part) in water (16 parts) until reduced to one-fourth. The filtered decoction was combined with *Go Ghrita* (4 parts) and cooked over mild heat (*Mandagni*) until only the *Ghrita* remained. The constituent herbs comprised: *Jati* (Jasminum officinale - leaves), *Patola* (Trichosanthes dioica - leaves), *Nimba* (Azadirachta indica - leaves), *Kutki* (Picrorhiza kurroa - rhizome), *Daruharidra* (Berberis aristata - stem), *Haridra* (Curcuma longa - rhizome), *Sariva* (Hemidesmus indicus - root), *Manjistha* (Rubia cordifolia - root), *Kusha* (Desmostachya bipinnata - root), *Yashtimadhu* (Glycyrrhiza glabra), *Karanja Beej* (Pongamia pinnata - seeds), *Tutha* (copper sulphate), and *Siktha/Madhuchhista* (beeswax) in *Go Ghrita* base. The prepared *Ghrita* was collected, measured, filled in aluminium tubes, and stored for clinical use.

F. Treatment Protocol

Both ointments were applied topically to the post-operative wound site twice daily following gentle cleansing. Treatment was continued for 7 consecutive days, followed by a 7-day follow-up period (total study duration: 15 days). All patients were advised standardised dietary guidance as per *Vranitopasniya Adhyaya (Sutrasthana* Chapter 19) of *Sushruta Samhita*, emphasising easily digestible, non-spicy, fibre-rich foods and adequate hydration. No additional systemic analgesics or antibiotics were administered during the trial period.

G. Outcome Assessment Parameters

Clinical outcomes were assessed at baseline (before treatment, BT) and at the end of 7 days (after treatment, AT) using validated ordinal grading scales:

Table 1: Grading Scales for Outcome Parameters

Parameter	Grade 0 (Absent)	Grade 1 (Mild)	Grade 2 (Moderate)	Grade 3 (Severe)
Pain (VAS)	No pain	Occasional / slight pain	Noticeable pain interfering with comfort	Continuous / distressing pain
Burning Sensation	No burning	Occasional burning before/after defecation	Frequent burning sensation	Continuous burning throughout the day
Tenderness	No tenderness	Tenderness on deep pressure	Tenderness on moderate pressure	Tenderness even on light touch

Overall treatment response was graded as: Mild Improvement (1-25% relief), Moderate Improvement (26-50%), Significant Improvement (51-75%), and Excellent Improvement (76-100%).

H. Statistical Analysis

All data were entered and analysed using GraphPad InStat 3.0 (Trial Version). Descriptive statistics including Mean, Standard Deviation (SD), and Standard Error (SE) were calculated for all quantitative variables. Since the outcome variables were ordinal and non-parametric, the Mann-Whitney U test (two-tailed) was applied for intra-group comparison of pre- and post-treatment scores. Percentage relief was calculated as: % Relief = (Mean Difference / BT Mean) x 100. The level of significance was set at $p < 0.001$ (Highly Significant), $p < 0.01$ (Significant), and $p < 0.05$ (Insignificant).

III. RESULTS

A. Demographic and Baseline Profile

All 40 enrolled patients completed the study protocol without any withdrawals or protocol violations. Both groups were comparable at baseline in terms of demographic and constitutional parameters.

Age distribution: The majority of patients (55%) belonged to the 30-49-year age group, with the 30-39 and 40-49 year brackets each comprising 27.5% of the total sample (n=11 each). Patients below 30 years constituted 25% (n=10), and those above 50 years constituted 20% (n=8). This distribution is consistent with the established epidemiology of Fissure-in-Ano preferentially affecting middle-aged adults.

Sex distribution: Males comprised 75% (n=15) and females 25% (n=5) in both groups, confirming identical gender distribution and inter-group comparability. The male predominance aligns with reported literature indicating higher incidence in males due to dietary and occupational factors.

Occupational analysis revealed that government employees (25%) and shopkeepers (22.5%) were most frequently represented, followed by private sector workers (17.5%) and housewives (10%), suggesting a predominance of sedentary occupational profiles. Urban residence was more common (62.5%), and 70% of all patients reported constipation as a co-existing complaint, consistent with the well-established aetiopathological link between constipation and Fissure-in-Ano. Dietetic analysis revealed that 40% followed a mixed diet, 40% were vegetarian, and 20% were non-vegetarian. All patients had no significant past medical history.

Constitutional (*Prakriti*/*Ayurvedic*) profile: *Madhyama Koshtha* (moderate bowel habit) was present in 45% of patients, *Madhyama Sara* in 92.5%, *Madhyama Samhanana* in 72.5%, *Madhyama Satmya* in 85%, and *Madhyama Ahara Shakti* in 70%, indicating a predominantly moderate constitutional profile in both groups.

Table 2: Demographic Distribution of Study Participants (N=40)

Variable	Category	Group A (n=20)	Group B (n=20)	Total (n=40)	% Total
Age (years)	< 30	4	6	10	25.0%
	30-39	7	4	11	27.5%
	40-49	4	7	11	27.5%
	≥ 50	5	3	8	20.0%
Sex	Male	15	15	30	75.0%
	Female	5	5	10	25.0%
Bowel Habit	Constipation	15	13	28	70.0%
	Normal	5	7	12	30.0%
Habitat	Urban	5	15	25	62.5%
	Rural	15	5	15	37.5%
Diet	Mixed	9	7	16	40.0%
	Vegetarian	6	10	16	40.0%
	Non-Vegetarian	5	3	8	20.0%

B. Effect of Treatment on Subjective Parameters

The primary statistical analysis using the Mann-Whitney test (two-tailed) revealed highly significant improvement (p=0.001) in all three assessed parameters in both groups. The complete results are presented in Table 3.

Table 3: Effect of Therapeutic Trial on Subjective Parameters - Mann-Whitney Test Analysis

Parameter	Group	n	Mean BT	Mean AT	Mean Diff.	% Relief	SD (±)	SE (±)	p-value	Significance
Pain	A (*Karpura*)	20	7.0	1.4	5.6	79.82%	0.50	0.112	0.001	ES*
	B (*Jatyadi*)	20	7.1	2.1	5.0	70.42%	0.55	0.123	0.001	ES*
Burning Sensation	A (*Karpura*)	20	8.5	1.7	6.8	79.86%	0.42	0.094	0.001	ES*
	B (*Jatyadi*)	20	8.6	2.5	6.1	70.93%	0.45	0.100	0.001	ES*
Tenderness	A (*Karpura*)	20	7.8	1.6	6.2	79.85%	0.48	0.107	0.001	ES*
	B (*Jatyadi*)	20	7.9	2.3	5.6	70.89%	0.52	0.116	0.001	ES*

**ES = Extremely Significant (p < 0.001); BT = Before Treatment; AT = After Treatment*

C. Comparative Percentage Relief

Table 4 summarises the comparative percentage relief in both groups across all outcome parameters.

Table 4: Percentage Relief in Subjective Parameters - Comparative Analysis

Subjective Parameter	Group A (*Karpura Ghrita*) - % Relief	Group B (*Jatyadi Ghrita*) - % Relief	Difference (A-B)
Pain	80.15%	70.42%	+9.73%
Burning Sensation	79.86%	70.93%	+8.93%
Tenderness	79.85%	70.89%	+8.96%
Overall Mean	79.95%	70.75%	+9.20%

Group A (*Karpura Ghrita*) demonstrated consistently superior percentage relief compared to Group B (*Jatyadi Ghrita*) across all parameters, with approximately 9-10% higher efficacy. Both groups showed excellent improvement (>75% relief category) for Group A and significant improvement (>70%) for Group B, confirming the clinical significance of both interventions. No adverse events, allergic reactions, or treatment withdrawals were recorded in either group, confirming the safety of both formulations.

IV. DISCUSSION

A. Disease Perspective: Fissure-in-Ano and Parikartika

Fissure-in-Ano is a well-recognised anorectal condition whose pathophysiology involves a cycle of sphincter hypertonia, local ischaemia, impaired wound healing, and pain-induced spasm perpetuation. The posterior midline anoderm is particularly vulnerable due to poor perfusion, lack of submucosal support, and the mechanical trauma of defecation [1,3]. Following surgical correction, the resulting wound enters an acute inflammatory healing phase where optimal local management is critical to prevent secondary colonisation and promote orderly tissue regeneration.

The Ayurvedic correlation, *Parikartika*, encompasses this pathophysiology through the concept of vitiated *Apana Vayu* causing constipation, hard stool passage, and subsequent ano dermal tears. The concomitant *Pitta* aggravation explains the burning sensation, erythema, and inflammatory changes.

Classical texts confirm *Parikartika* arises at the *Guda* region, affecting the superficial *Twak* (epidermis), classifying it as *Sadhya* (easily curable) in acute stages and *Kricchasadhya* (difficult to cure) when chronic, thus correlating exactly with the acute-versus-chronic fissure dichotomy in modern surgery [4,5]. The observed predominance of constipation (70%) and middle-aged male patients in this study is consistent with reported epidemiological patterns from tertiary anorectal surgical centres across India [8,9].

B. Pharmacodynamic Basis of Karpura Ghrita

Karpura (Cinnamomum camphora, C10H16O) is a bicyclic monoterpenoid exhibiting well-documented local anaesthetic, analgesic, antiseptic, anti-inflammatory, and rubefacient properties. Pharmacologically, camphor stimulates local afferent nerve fibres (counter-irritant mechanism) followed by sensory depression, producing a characteristic cooling analgesic effect. It is rapidly absorbed transdermally through skin and mucous membranes, achieves local tissue concentrations effectively, and undergoes hepatic oxidation before urinary excretion as glucuronide conjugate [10,11].

Shatadhauta Ghrita, the base of this formulation, undergoes physicochemical transformation through the 100-wash process: particle size is reduced, water content increases, copper ions from the washing vessel impart anti-inflammatory activity, and the resulting product acquires enhanced spreadability, skin penetration, and Pitta-pacifying properties. The lipophilic nature of *Ghrita* facilitates transdermal delivery of camphor to deeper anal mucosal layers, ensuring sustained therapeutic concentration at the wound site [12]. The combination provides a dual mechanism: *Karpura* provides rapid antiseptic and analgesic action, while *Shatadhauta Ghrita* nourishes and cools the wound, promoting epithelialisation. This explains the superior pain (80.15%) and burning sensation (79.86%) relief observed in Group A. Biswas et al. (2002) confirmed that camphor-based preparations demonstrate significant antimicrobial activity against gram-positive wound pathogens [13]. Dudhamal et al. (2012) demonstrated the wound-healing efficacy of ghee-based formulations in post-operative anorectal wounds, noting accelerated granulation tissue formation and epithelialisation [14]. The superior performance of *Karpura Ghrita* in early symptomatic relief in the present study is consistent with its classical indication as a *Shastra Kshata Ropaka* (surgical wound healer).

C. Pharmacodynamic Basis of Jatyadi Ghrita

Jatyadi Ghrita's multi-ingredient composition provides broad-spectrum therapeutic coverage. *Haridra* (Curcuma longa) contains curcumin, which inhibits NF-kB-mediated inflammatory pathways, reduces prostaglandin synthesis, and accelerates wound healing by promoting TGF-beta-induced collagen deposition, as demonstrated in multiple in vitro and in vivo studies [15]. *Daruharidra* (Berberis aristata) contains berberine, which exhibits potent antibacterial activity against Staphylococcus aureus and E. coli, and local anaesthetic properties through sodium channel blockade [16]. *Nimba* (Azadirachta indica) demonstrates broad-spectrum antimicrobial, antifungal, and anti-inflammatory activity, preventing secondary wound colonisation [13]. *Manjistha* (Rubia cordifolia) improves local microcirculation and promotes *Rakta Prasadana* (blood purification), facilitating oxygenation of the healing wound bed. *Tutha* (copper sulphate) acts as a potent antiseptic and astringent, while *Madhuchhista* (beeswax) forms a protective barrier and reduces wound contamination. The combined action of these constituents addresses all aspects of the wound healing cascade: debridement (*Shodhana*), anti-infection (*Krimighna*), anti-inflammation (*Shothahara*), and tissue regeneration (*Ropana*). Joshi (2004) and Prajapati (2013) reported significant clinical outcomes with polyherbal *Ghrita* formulations in *Parikartika* management, supporting the efficacy of multi-ingredient approaches for complex wound healing [17,18].

D. Comparison of Both Formulations

The comparative analysis reveals a consistent pattern: Group A (*Karpura Ghrita*) outperformed Group B (*Jatyadi Ghrita*) by approximately 9-10% across all parameters within the 7-day treatment window. This difference is clinically meaningful and pharmacologically explicable. *Karpura's* rapid transdermal absorption, immediate counter-irritant analgesic action, and potent antiseptic properties confer faster symptomatic relief, making it particularly suited to the acute inflammatory phase of post-operative wound healing (days 1-7). The observed VAS pain reduction from 7.0 to 1.4 (80.15% relief) in Group A is clinically significant and comparable to topical lignocaine-based preparations reported in conventional surgical literature [3].

Jatyadi Ghrita, despite slightly lower percentage relief in this short-duration study, demonstrated clinically meaningful improvement (>70% relief in all parameters) and offers distinct advantages in the proliferative and remodelling phases of wound healing (beyond day 7) due to its Vrana *Shodhana* and granulation-promoting properties. Sangani (2007) and Dudhamal et al. (2012) reported superior granulation tissue formation and reduced recurrence rates with *Jatyadi Ghrita*-based treatments in chronic fissure cases [14,19]. The observed differences in percentage relief between groups may therefore reflect the 7-day assessment window favouring *Karpura Ghrita*'s faster initial action, rather than indicating absolute therapeutic superiority over longer periods.

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E. Ayurvedic Mode of Action

Both formulations achieve wound healing through shared Ayurvedic mechanisms: *Vata-Pitta Shamana* (resolving the primary doshic imbalance), *Vedana Sthapana* (analgesic effect addressing *Vata*-induced pain), *Daha Prashamana* (cooling effect addressing Pitta-induced burning), *Vrana Shodhana* (wound cleansing and antisepsis), and *Vrana Ropana* (tissue regeneration and epithelialisation). These Ayurvedic pharmacodynamic actions map directly onto the modern wound healing phases: inflammatory phase resolution (corresponding to *Shodhana*), proliferative phase facilitation (corresponding to *Ropana*), and remodelling phase support (corresponding to *Rasayana*/*Dhatu Poshana* properties of *Ghrita*).

The *Yogavahithva* property of *Ghrita* — its capacity to carry and potentiate the actions of combined medicinal substances — ensures that all active phytochemicals are effectively delivered to the wound site, providing synergistic therapeutic effects greater than the sum of individual components [12].

F. Strengths and Limitations

Strengths of this study include: prospective randomised design with CTRI registration, standardised drug preparation following classical Ayurvedic pharmacopoeial methods, validated grading instruments, and complete follow-up (0% dropout). The sample size of 40 patients provides adequate power for detecting clinically meaningful differences between groups.

Limitations include: open-label design (blinding was not feasible due to differences in ointment appearance and odour), relatively short 7-day assessment window which may underestimate the full wound-healing potential of *Jatyadi Ghrita*, absence of objective wound-healing parameters (wound area measurement, histopathological assessment), lack of a placebo control arm, and single-centre design limiting generalisability. Future multi-centre randomised controlled trials with longer follow-up, placebo control, objective wound measurement, and microbiological outcomes are recommended to further validate these findings.

V. CONCLUSION

The present randomised comparative clinical trial demonstrates that both *Karpura Ghrita* ointment and *Jatyadi Ghrita* ointment are clinically efficacious, well-tolerated, and safe topical formulations for the management of post-operative wounds following Fissure-in-Ano surgery. Both interventions produced statistically highly significant improvement ($p=0.001$) in pain, burning sensation, and tenderness on day 7.

Karpura Ghrita (Group A) demonstrated superior percentage relief in pain (80.15%), burning sensation (79.86%), and tenderness (79.85%) compared to *Jatyadi Ghrita* (Group B), which achieved 70.42%, 70.93%, and 70.89% respectively. Based on these findings, *Karpura Ghrita* is recommended for rapid symptomatic relief in the acute phase of post-operative fissure wound management, while *Jatyadi Ghrita* is appropriate for sustained wound healing, granulation tissue formation, and anti-infective coverage in the subacute and chronic phases.

These classical Ayurvedic formulations offer a safe, cost-effective, and holistic alternative or adjunct to conventional post-operative topical wound care, addressing not only local wound pathology but also the systemic *doshic* imbalance underlying *Parikartika*. Their integration into contemporary anorectal surgical post-operative protocols merits serious consideration, particularly in resource-limited settings where access to conventional wound care products may be restricted.

VI. ACKNOWLEDGEMENTS

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VII. CONFLICT OF INTEREST

The authors declare no conflict of interest. No external funding was received for this study. Drug preparations were carried out under standard Ayurvedic pharmacopoeial methods at the institutional pharmacy.

VIII. ETHICAL APPROVAL

This study was approved by the Institutional Ethics Committee (IEC) of PGIA, DSRRAU, Jodhpur, vide approval letter no. DSRRAU/PGIA/IEC/22-23/634, dated 29/02/2024. The trial was registered prospectively with the CTRI under the registration number CTRI/2024/07/0710491.

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IX. SUGGESTED JOURNALS FOR SUBMISSION

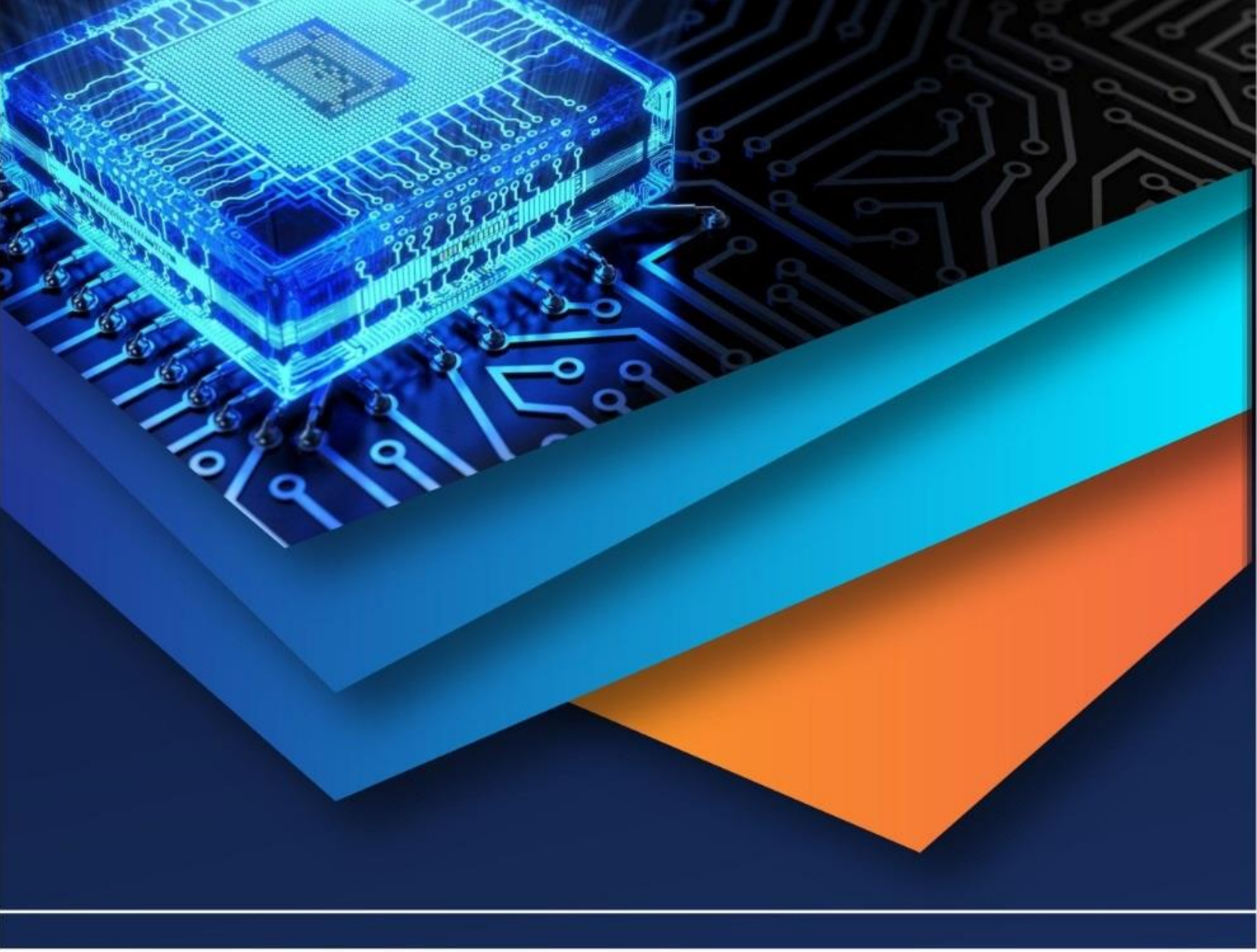
Recommendation based on scope, ISSN, Scopus indexing, and Ayurveda/Integrative Medicine focus:

1) Journal of Ayurveda and Integrative Medicine (J-AIM) — Elsevier | ISSN: 0975-9476 | Scopus indexed | Impact Factor: 1.8+ | Focus: Clinical Ayurveda, herbal pharmacology, integrative surgery
2) Ancient Science of Life — Wolters Kluwer / Medknow | ISSN: 0257-7941 | Scopus indexed | Focus: Ayurvedic clinical trials, drug review, traditional medicine
3) Journal of Ethnopharmacology — Elsevier | ISSN: 0378-8741 | Scopus/SCI indexed | Impact Factor: 5.4 | Suitable for pharmacodynamic aspects of Karpura and polyherbal formulations

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