



The Analysis Study of Effect of Acupuncture on the Treatment of Atopic Itch: A Comprehensive Systematic Review

¹ Stephanie, ² Natalia Wijaya

¹ General Practitioner, Tzu Chi General Hospital, Special Region of Jakarta, Indonesia

² Faculty of Medicine, Trisakti University, Special Region of Jakarta, Indonesia

Correspondence : dr.stephaniie@gmail.com

Article History :

Received date : 2024/07/29
Revised date : 2024/08/12
Accepted date : 2024/09/24
Published date : 2024/10/22



Copyright: © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (BY NC) license (<https://creativecommons.org/licenses/by-nc/4.0/>).

ABSTRACT

Background: Atopic dermatitis is a common inflammatory skin disorder characterized by recurrent eczematous lesions and severe itching. Given its chronic nature and association with persistent pruritus, exploring therapies like acupuncture may offer valuable relief and enhance patient outcomes. This systematic review aims to explore the efficacy and mechanisms of acupuncture as a treatment for atopic pruritus based on the literature of the last decade. **Methods:** The study followed PRISMA 2020 guidelines, reviewing English-language publications from 2014 to 2024. Editorials, duplicate reviews from the same journal, and papers lacking a DOI were excluded. The literature search was conducted using PubMed, SagePub, SpringerLink, and Google Scholar. **Result:** A total of 630 articles were initially identified through online databases (PubMed, SagePub, SpringerLink, and Google Scholar). After three rounds of screening, eight relevant studies were selected for full-text analysis. **Conclusion:** Acupuncture shows potential as a noninvasive and effective treatment for reducing pruritus and associated symptoms in patients with atopic dermatitis and other pruritic conditions. The observed benefits, such as decreased itch intensity, improved quality of life, and reduced medication use, underline its value as an adjunct therapy.

Keyword: acupuncture, chronic pruritus, atopic itch

INTRODUCTION

Itch, or pruritus, is a distressing sensation that elicits an urge to scratch, leading to a significant decline in quality of life, especially in chronic cases. Chronic pruritus, defined as an itch lasting more than six weeks, affects up to 20% of the general population at least once in their lifetime and can reach nearly 100% in individuals with certain skin conditions.^{1,2} This persistent itch is often accompanied by burning and stinging sensations, contributing to sleep disturbances, reduced productivity, and an exacerbation of the itch-scratch cycle, which further damages the skin and intensifies itching.^{3,4}

The underlying causes of chronic pruritus are varied, ranging from dermatological conditions and immune system disorders to nervous system dysfunctions and metabolic issues. Despite the availability of antihistamines, many cases of chronic itch, particularly non-histaminergic pruritus, remain resistant to conventional therapies. Recent advancements have introduced

biologics and κ -opioid receptor agonists (KORs) as potential treatments, though these options are often expensive or carry significant risks.⁵⁻⁷

Atopic dermatitis is a common inflammatory skin disorder characterized by recurrent eczematous lesions and severe itching, affecting individuals of all ages and ethnic backgrounds. This condition has significant psychosocial implications for both patients and their families, contributing to the global burden of skin diseases. The pathophysiology of atopic dermatitis is complex, involving genetic predisposition, epidermal dysfunction, and T-cell mediated inflammation, with increasing evidence for multiple immune pathways. Although there is no definitive cure, innovative targeted therapies show promise for managing the disease, particularly in patients with treatment-resistant cases.⁸⁻¹⁰

Acupuncture, an ancient practice rooted in traditional medicine, has been increasingly recognized for its potential

antipruritic effects. Since its first reported use for pruritus in 1984, acupuncture has shown promising results in alleviating itch while enhancing patients' overall quality of life.¹¹ Its impact on reducing itch-evoked activation in specific brain regions, such as the insula and putamen, and its ability to modulate neural pathways involved in the "itch-scratch vicious cycle" have drawn attention as possible mechanisms for its effectiveness. Moreover, acupuncture's influence on gastrin-releasing peptide receptor (GRPR) expression, a key receptor in the spinal cord's itch transmission, presents a potential target for itch management at the spinal level.¹²⁻¹⁵

This systematic review aims to explore the efficacy and mechanisms of acupuncture as a treatment for atopic pruritus, synthesizing data from various studies to assess its potential role in interrupting the neural pathways responsible for chronic itching and providing a safer, more accessible therapeutic option for patients suffering from this debilitating condition.

METHODS

Protocol

The study strictly adhered to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 guidelines to ensure methodological rigor and accuracy. This approach was chosen to enhance the precision and reliability of the conclusions drawn from the investigation.

Criteria for Eligibility

The systematic review focused on analyzing the efficacy and mechanisms of acupuncture as a treatment for atopic pruritus based on literature from the past decade. The review aimed to provide insights to improve patient treatment strategies, with an emphasis on the significance of key findings in the reviewed studies. Inclusion criteria for the study included: 1) Papers published in English, and 2) Papers published between 2014 and 2024. Exclusion criteria were: 1) Editorials, 2) Papers without a DOI, 3) Previously published review articles, and 4) Duplicate entries in journals..

Search Strategy

The keywords used for this research are acupuncture, chronic pruritus, atopic itch. The Boolean MeSH keywords inputted on databases for this research are:

((("acupunctural"[All Fields] OR "acupuncture"[MeSH Terms] OR "acupuncture"[All Fields] OR "acupuncture therapy"[MeSH Terms] OR ("acupuncture"[All Fields] AND "therapy"[All Fields]) OR "acupuncture therapy"[All Fields] OR "acupuncture s"[All Fields] OR "acupunctured"[All Fields] OR "acupunctures"[All Fields] OR "acupuncturing"[All Fields]) AND ("chronic"[All Fields] OR "chronical"[All Fields] OR "chronically"[All Fields] OR "chronicities"[All Fields] OR "chronicity"[All Fields] OR "chronicization"[All Fields] OR "chronics"[All Fields]) AND ("pruritus"[MeSH Terms] OR "pruritus"[All Fields])) OR ((("atopic"[All Fields] OR "atopical"[All Fields] OR "atopics"[All Fields]) AND ("pruritus"[MeSH Terms] OR

"pruritus"[All Fields] OR "itch"[All Fields])).

Data retrieval

Abstracts and titles were screened to assess their eligibility, and only studies meeting the inclusion criteria were selected for further analysis. Literature that fulfilled all predefined criteria and directly related to the topic was included. Studies that did not meet these criteria were excluded. Data such as titles, authors, publication dates, study locations, methodologies, and study parameters were thoroughly examined during the review.

Quality Assessment and Data Synthesis

Each author independently assessed the titles and abstracts of the selected studies to identify those for further exploration. Articles that met the inclusion criteria underwent further evaluation. Final decisions on inclusion were based on the findings from this review process.

Table 1. Article Search Strategy

Database	Keywords	Hits
Pubmed	((("acupunctural"[All Fields] OR "acupuncture"[MeSH Terms] OR "acupuncture"[All Fields] OR "acupuncture therapy"[MeSH Terms] OR ("acupuncture"[All Fields] AND "therapy"[All Fields]) OR "acupuncture therapy"[All Fields] OR "acupuncture s"[All Fields] OR "acupunctured"[All Fields] OR "acupunctures"[All Fields] OR "acupuncturing"[All Fields]) AND (("chronic"[All Fields] OR "chronical"[All Fields] OR "chronically"[All Fields] OR "chronicities"[All Fields] OR "chronicity"[All Fields] OR "chronicization"[All Fields] OR "chronics"[All Fields]) AND ("pruritus"[MeSH Terms] OR "pruritus"[All Fields]))) OR (("atopic"[All Fields] OR "atopical"[All Fields] OR "atopics"[All Fields]) AND ("pruritus"[MeSH Terms] OR "pruritus"[All Fields] OR "itch"[All Fields])))	170
Springer Link	((acupuncture) AND (chronic pruritus)) OR (atopic itch)	220
Sagepub	((acupuncture) AND (chronic pruritus)) OR (atopic itch)	80
Google Scholar	((acupuncture) AND (chronic pruritus)) OR (atopic itch)	160

Table 2. JBI *Critical appraisal of Study*

Parameters	Abad-Constantino (2021)	Park (2021)	Kang (2023)	Lee (2014)	Rotter (2022)	Jeon (2016)	Tsai (2014)	Nahidi (2018)
1. Bias related to temporal precedence Is it clear in the study what is the “cause” and what is the “effect” (ie, there is no confusion about which variable comes first)?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Bias related to selection and allocation Was there a control group?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Bias related to confounding factors Were participants included in any comparisons similar?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Bias related to administration of intervention/exposure Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	No.	No.	No.	No.	No.	No.	No.	No.
5. Bias related to assessment, detection, and measurement of the outcome Were there multiple measurements of the outcome, both pre and post the intervention/exposure?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were the outcomes of participants included in any comparisons measured in the same way?	No.	No.	No.	No.	No.	No.	No.	No.
Were outcomes measured in a reliable way?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6. Bias related to participant retention Was follow-up complete and, if not, were differences between groups in terms of their follow-up adequately described and analyzed?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7. Statistical conclusion validity Was appropriate statistical analysis used?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

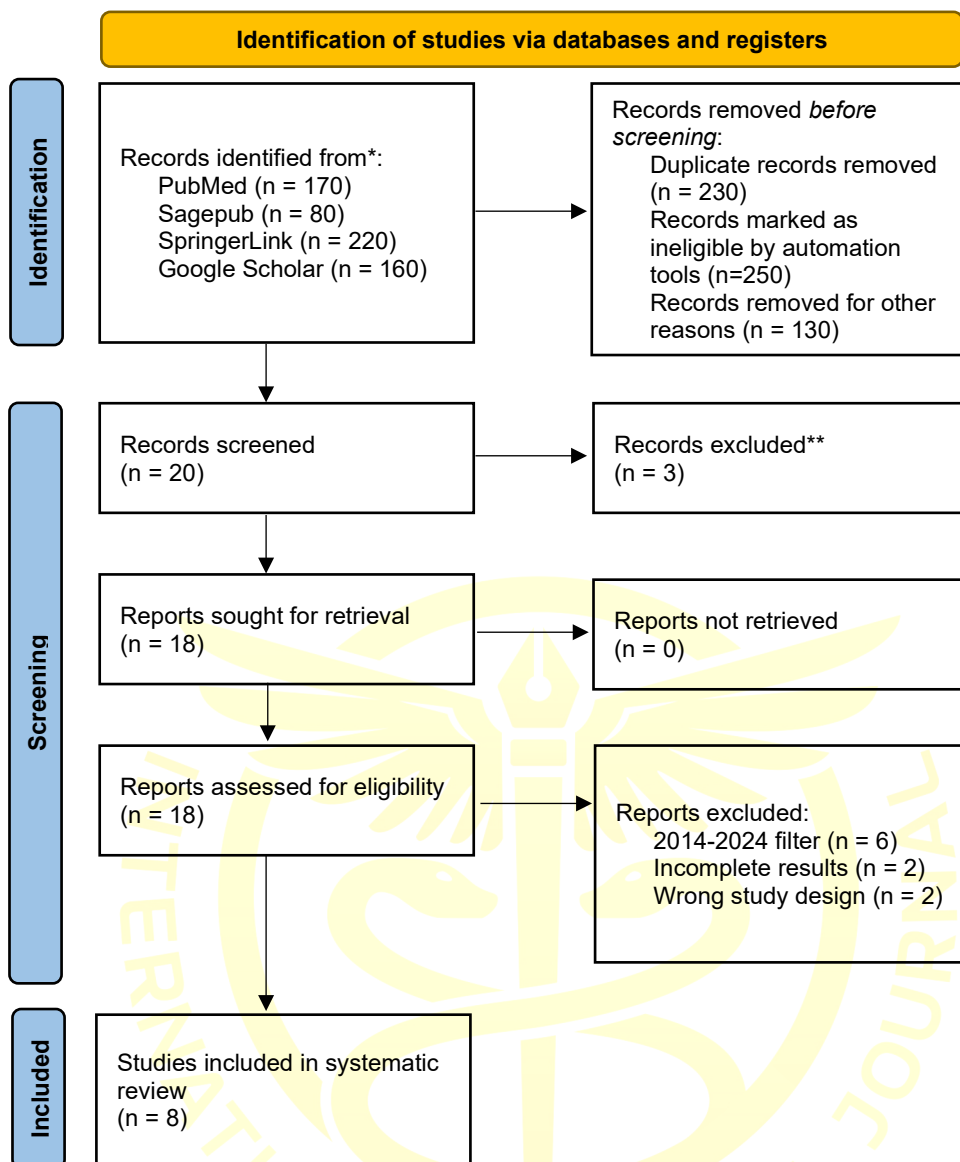


Figure 1. Article search flowchart

RESULT

The initial number of articles retrieved from online databases (PubMed, SagePub, SpringerLink, and Google Scholar) is 630 articles. After conducting three levels of screening, eight articles that directly relate to the current systematic review have been chosen for further assessment through full-text reading and analysis. Table 1 presents the selected literature included in this analysis.

Table 1. The literature included in this study

No.	Author	Origin	Method	Sample	Result
1.	Abad-Constantino, et al. ¹⁶ (2021)	Philippine	RCT	30 patients	Out of 30 randomized patients, 28 were included in the efficacy analysis. No significant differences in baseline demographics or clinical characteristics were observed between the True Acupuncture (TA) group (n=16) and the Sham Acupuncture (SA) group (n=12). Both groups experienced a reduction in itch intensity (measured by VAS, $p=0.024$), but the TA group showed a greater and more sustained reduction ($p=0.009$). Medication use decreased in both groups. The comparable efficacy of SA to TA may be due to stimulation of cutaneous C-fibers, leading to neurotransmitter depletion and tachyphylaxis. Mild adverse events like petechiae and erythema occurred in both groups and resolved on their own.
2.	Park, et al. ¹⁷ (2021)	South Korea	RCT	36 patients	A total of 36 participants (aged 19 to 38 years) were enrolled, with 35 included in the intention-to-treat analysis. After 4 weeks, the mean change in SCORAD scores showed a significant difference between the Verum Acupuncture (VA) group and the Sham Acupuncture (SA) group ($P < .0001$). The VA group had a mean score reduction of -11.83 ,

					while the SA group showed a minimal change of 0.45. The VA group saw a significant improvement in SCORAD scores as early as 2 weeks after starting treatment, which continued for at least 4 weeks post-treatment ($P < .0001$). No serious adverse events were reported.
3.	Kang, et al. ¹⁸ (2023)	South Korea	RCT	30 patients	Significant improvements were observed in SCORAD, VAS (Pruritus and Insomnia), POEM, DLQI, and EASI scores in the Verum Acupuncture (VA) groups. The most notable changes in the BIS scores were seen in epigastric tenderness and dyspepsia. No significant differences were found between the two VA groups (VA1 and VA2) across the main evaluation indices.
4.	Lee, et al. ¹⁹ (2014)	USA	RCT	15 patients	Fifteen subjects were enrolled, with 12 completing the study. In the control group, there were no significant changes in survey scores from baseline to follow-up. In the experimental group, a significant decrease in the VAS score ($p=0.05$) and EASI lichenification score ($p=0.03$) was observed, though the overall EASI score remained unchanged. When comparing the two groups, the experimental group showed a greater

					reduction in VAS (p=0.04), IGA (p=0.03), and EASI lichenification scores (p=0.03), while the overall EASI scores remained constant.
5.	Rotter, et al. ²⁰ (2022)	Germany	RCT	121 patients	A total of 121 patients (92 women, 29 men) with an average age of 31.4 ± 10.5 years were randomized. After 12 weeks, the adjusted mean SCORAD scores for the Acupuncture (ACU), Osteopathic Manipulation (OM), and control groups were 22.3, 26.4, and 23.7, respectively (P = 0.32), indicating no significant differences in disease severity. However, VAS itching scores were significantly lower in the ACU group at 27.9 compared to 35.0 in the OM group and 42.3 in the control group (P < 0.05). TCS (topical corticosteroid) use also trended lower in the ACU and OM groups, though not statistically significant (P = 0.10).
6.	Jeon, et al. ²¹ (2016)	South Korea	Case report	1 patient	The patient received acupuncture treatment based on Sa-Am acupuncture theory, targeting the hand tai-yin and foot tai-yang meridians to address lung dryness, lung heat, and heart fire. Acupoints LU9 and SP3 were used to tonify the hand tai-yin meridian to reduce lung issues, while BL67 was

					used to tonify the foot tai-yang bladder meridian to sedate heart fire. After approximately 6 months of treatment, the patient's symptoms completely disappeared.
7.	Tsai, et al. ²² (2014)	Taiwan	Case control study	12 samples	Cold stimulation at the LI11 acupoint (20°C) significantly reduced compound 48/80-induced scratching in mice, whereas stimulation at a sham point did not produce this effect. Cold stimulation at LI11 also suppressed c-fos expression in cervical spinal neurons induced by compound 48/80. The antipruritic effect was blocked by ruthenium red, a non-selective TRP channel blocker, suggesting that transient receptor potential (TRP) channels may be involved in the antipruritic mechanism of cold stimulation at LI11.
8.	Nahidi, et al. ²³ (2018)	Iran	RCT	26 patients	The study involved 26 participants with a mean age of 49.04 ±14.93 years (range: 23 to 65 years), with 65.4% male and 34.6% female. A significant difference in pruritus scores was observed before and after the intervention, with the intervention group showing a greater improvement (score difference of 5.94) compared to the control group (1.27). The

					difference between the groups after the intervention was also significant ($P < 0.001$).
--	--	--	--	--	--



Abad-Constantino, et al.¹⁶ (2021) showed that acupuncture appears to be a promising adjunct treatment for atopic dermatitis, significantly reducing pruritus, disease severity, and medication use. Larger studies and comparisons with acupuncture points further from the true points are recommended.

Park, et al.¹⁷ (2021) showed that twice-weekly acupuncture effectively reduced symptoms of atopic dermatitis in patients with mild to moderate AD, without any serious adverse events.

Kang, et al.¹⁸ (2023) suggested 4-week acupuncture treatment period (twice weekly) followed by a 4-week follow-up for pruritus. Additionally, differences in general symptoms based on the presence of epigastric tenderness or dyspepsia at screening should be assessed.

Lee, et al.¹⁹ (2014) showed that acupressure at LI11 for 4 weeks improved pruritus and lichenification in participants. Although promising, larger studies are needed to validate these initial findings as a potential alternative treatment.

Rotter, et al.²⁰ (2022) concluded that acupuncture appeared to reduce itching in atopic dermatitis patients. Both acupuncture and osteopathic manipulation showed a trend toward reducing TCS use, though they were not cost-effective compared to the control group.

Jeon, et al.²¹ (2016) showed that Traditional Korean Medicine (TKM), particularly Sa-Am acupuncture, may be effective in treating psoriasis.

Tsai, et al.²² (2014) shows that cold stimulation at LI11 reduces scratching behavior in mice through a TRP-related pathway.

Nahidi, et al.²³ (2018) suggests that acupuncture is a safe, noninvasive, and effective treatment for managing pruritus in hemodialysis patients. Understanding the pathophysiology of pruritus and acupuncture's neurobiological mechanisms may lead to better therapeutic approaches for reducing itching.

DISCUSSION

The systematic review of acupuncture for treating atopic itch or pruritus reveals promising yet varied outcomes across multiple studies,

highlighting both the efficacy and potential mechanisms behind acupuncture in managing symptoms associated with atopic dermatitis (AD). While the results are generally positive, the effectiveness of acupuncture depends on specific techniques, treatment duration, and patient characteristics, warranting further large-scale investigations.

Several randomized controlled trials (RCTs) demonstrated significant improvements in pruritus symptoms, with particular focus on the Verum Acupuncture (VA) technique. Abad-Constantino et al. (2021) found that true acupuncture (TA) led to a greater and more sustained reduction in itch intensity compared to sham acupuncture (SA). Both groups showed a decrease in medication use, suggesting a broader impact of acupuncture on disease management.¹⁶ These findings were echoed by Park et al. (2021), where VA resulted in a significant reduction in SCORAD scores, indicating a substantial improvement in disease severity as early as two weeks into treatment.¹⁷

Similarly, Kang et al. (2023) confirmed that acupuncture leads to

significant improvements in multiple outcome measures including SCORAD, VAS for pruritus and insomnia, POEM, DLQI, and EASI scores. This study also underscores the importance of considering general symptoms like epigastric tenderness, which may influence the overall efficacy of the treatment.¹⁸

Interestingly, Lee et al. (2014) explored the effects of acupressure at LI11 and found improvements in pruritus and lichenification, though the overall EASI score remained unchanged. This points to the specific benefit of acupressure on itch and skin texture, making it a potential alternative for patients seeking noninvasive treatments. However, further validation in larger studies is needed.¹⁹

Rotter et al. (2022) highlighted acupuncture's ability to reduce itching in AD patients. Although no significant difference in disease severity was found across groups, the reduction in VAS itching scores and the trend toward lower topical corticosteroid (TCS) use suggests acupuncture may serve as an adjunct therapy, though cost-effectiveness remains a concern.²⁰

In addition to human trials, Tsai et al. (2014) explored the mechanism behind acupuncture's antipruritic effects using a mouse model. Cold stimulation at the LI11 acupoint was shown to reduce scratching behavior via a transient receptor potential (TRP)-related pathway. This mechanistic insight suggests that TRP channels play a critical role in the antipruritic effect, offering a potential target for future therapeutic developments.²²

The findings from Nahidi et al. (2018) also support acupuncture's role in pruritus management, showing a significant reduction in itch scores in hemodialysis patients. The safety profile of acupuncture, with no serious adverse events reported across studies, reinforces its feasibility as a noninvasive and easily administered treatment.²³

Lastly, the case report by Jeon et al. (2016) introduces the potential of Traditional Korean Medicine (TKM), particularly Sa-Am acupuncture, in treating complex dermatological conditions such as psoriasis, indicating broader applications of acupuncture beyond atopic itch.²¹

CONCLUSION

Acupuncture shows potential as a noninvasive and effective treatment for reducing pruritus and associated symptoms in patients with atopic dermatitis and other pruritic conditions. The observed benefits, such as decreased itch intensity, improved quality of life, and reduced medication use, underline its value as an adjunct therapy.

REFERENCE

1. Liu J jia, Li X, Guo J, Yu S, Yang S. Role of GRPR in Acupuncture Intervention in the "Itch-scratch Vicious Cycle" Spinal Circuit of Chronic Pruritus. *Chin Med*. 2023;18(1):2. doi:10.1186/s13020-022-00706-4
2. Park JG, Park HJ, Chae Y, Kim YK, Lee H, Kim K. Acupuncture Treatment for Symptom Management in Atopic Dermatitis: A Study Protocol for a Randomized, Participant- and Assessor-Blind, Sham-Controlled Trial. *Evid-Based Complement Altern Med ECAM*. 2019;2019:1907578. doi:10.1155/2019/1907578

3. Kim J, Kwon SK, Lee IS, et al. Effect of Acupuncture on Gut-Brain Axis Parameters in Patients with Atopic Dermatitis: A Study Protocol for a Randomized, Participant- and Assessor-Blind, Sham-Controlled Trial. *Evid-Based Complement Altern Med ECAM*. 2021;2021:5584247. doi:10.1155/2021/5584247
4. Napadow V, Li A, Loggia ML, et al. The brain circuitry mediating antipruritic effects of acupuncture. *Cereb Cortex N Y N 1991*. 2014;24(4):873-882. doi:10.1093/cercor/bhs363
5. Mollanazar NK, Smith PK, Yosipovitch G. Mediators of Chronic Pruritus in Atopic Dermatitis: Getting the Itch Out? *Clin Rev Allergy Immunol*. 2016;51(3):263-292. doi:10.1007/s12016-015-8488-5
6. Ständer S, Luger T, Kim B, et al. Cutaneous Components Leading to Pruritus, Pain, and Neurosensitivity in Atopic Dermatitis: A Narrative Review. *Dermatol Ther*. 2024;14(1):45-57. doi:10.1007/s13555-023-01081-0
7. Wang Z, Yi T, Long M, Ding F, Ouyang L, Chen Z. Involvement of the Negative Feedback of IL-33 Signaling in the Anti-Inflammatory Effect of Electroacupuncture on Allergic Contact Dermatitis via Targeting MicroRNA-155 in Mast Cells. *Inflammation*. 2018;41(3):859-869. doi:10.1007/s10753-018-0740-8
8. Langan SM, Irvine AD, Weidinger S. Atopic dermatitis. *Lancet Lond Engl*. 2020;396(10247):345-360. doi:10.1016/S0140-6736(20)31286-1
9. Ji S. Comorbidities and the impact of atopic dermatitis. *Ann Allergy Asthma Immunol Off Publ Am Coll Allergy Asthma Immunol*. 2019;123(2). doi:10.1016/j.anai.2019.04.020
10. Silverberg JI. Selected comorbidities of atopic dermatitis: Atopy, neuropsychiatric, and musculoskeletal disorders. *Clin Dermatol*. 2017;35(4):360-366. doi:10.1016/j.clindermatol.2017.03.008

11. Wang S han, Liang R long, Yang H, et al. Electroacupuncture for relieving itching in atopic eczema: study protocol for a multicenter, randomized, sham-controlled trial. *Front Med.* 2023;10.
doi:10.3389/fmed.2023.1320230
12. Bonnekoh H, Butze M, Metz M. Characterization of the effects on pruritus by novel treatments for atopic dermatitis. *JDDG J Dtsch Dermatol Ges.* 2022;20(2):150-156. doi:10.1111/ddg.14678
13. Shi Y, Zheng H, Zhou S, et al. Efficacy and safety of acupuncture for patients with chronic urticaria: study protocol of a randomized, sham-controlled pilot trial. *Trials.* 2019;20(1):326. doi:10.1186/s13063-019-3433-1
14. Chan IHY, Murrell DF. Itch Management: Physical Approaches (UV Phototherapy, Acupuncture). Accessed October 15, 2024. <https://karger.com/books/book/155/chapter/5093614/Itch-Management-Physical-Approaches-UV>
15. Tang Z, Yu S, Pan Y. The gut microbiome tango in the progression of chronic kidney disease and potential therapeutic strategies. *J Transl Med.* 2023;21(1):689.
doi:10.1186/s12967-023-04455-2
16. Abad-Constantino RMR, Caro-Chang LM, Gatmaitan-Dumlao JKG, Abalos-Babaran S, Tangatue PN, Dofitas BL. Acupuncture as an Adjunct to Standard Therapy for Pruritus in Patients with Atopic Dermatitis: A Patient- and Assessor-blinded, Randomized, Placebo-controlled Trial. *Acta Med Philipp.* 2021;55(5).
doi:10.47895/amp.v55i5.3226
17. Park JG, Lee H, Yeom M, Chae Y, Park HJ, Kim K. Effect of acupuncture treatment in patients with mild to moderate atopic dermatitis: a randomized, participant- and assessor-blind sham-controlled trial. *BMC Complement Med Ther.* 2021;21(1):132.
doi:10.1186/s12906-021-03306-1

18. Kang S, Kim YK, Yeom M, et al. Acupuncture improves symptoms in patients with mild-to-moderate atopic dermatitis: A randomized, sham-controlled preliminary trial. *Complement Ther Med*. 2018;41:90-98. doi:10.1016/j.ctim.2018.08.013
19. Lee KC, Keyes A, Hensley JR, et al. Effectiveness of acupressure on pruritus and lichenification associated with atopic dermatitis: a pilot trial. *Acupunct Med J Br Med Acupunct Soc*. 2012;30(1):8-11. doi:10.1136/acupmed-2011-010088
20. Rotter G, Ahnert MW, Geue AV, et al. Acupuncture and osteopathic medicine for atopic dermatitis: a three-armed, randomized controlled explorative clinical trial. *Clin Exp Dermatol*. 2022;47(12):2166-2175. doi:10.1111/ced.15340
21. Jeon YC, Lee HB. Treatment of an Adult Patient with Atopic Dermatitis Using Traditional Korean Medicine, Especially Sa-Am Acupuncture. *J Acupunct Meridian Stud*. 2016;9(6):322-324. doi:10.1016/j.jams.2016.07.006
22. Tsai KS, Chen YH, Chen HY, et al. Antipruritic effect of cold stimulation at the Quchi Acupoint (LI11) in Mice. *BMC Complement Altern Med*. 2014;14(1):341. doi:10.1186/1472-6882-14-341
23. Nahidi Y, Badiie Aval S, Torabi S, Abbasi Z, Nazemian F, Saki A. Acupuncture Effect on Pruritus in Hemodialysis Patients: A Randomized Clinical Trial. *Iran Red Crescent Med J*. 2018;In Press. doi:10.5812/ircmj.65521