

The Effectiveness of Ginger and Honey Decoction Administration on Secretion Expulsion in Patients with Acute Respiratory Infection: A Literature Review

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ABSTRACT

Background & Objective: Acute Respiratory Infection (ARI) is one of the diseases that frequently occurs in toddlers and can cause increased secretion production, thereby disrupting airway clearance. One of the nonpharmacological therapies that can be used is the administration of ginger and honey decoction. The objective of this study was to analyze the effectiveness of ginger and honey decoction administration on secretion expulsion in ARI patients through a literature review. **Method:** This study used a literature review method with a descriptive-analytic approach. A total of 10 national and international research articles were selected based on inclusion and exclusion criteria. Data were obtained through searches in the Google Scholar, PubMed, and various national and international journal databases, then analyzed using content analysis. **Results:** The results of the review of 10 articles showed that the administration of ginger and honey decoction is effective in helping reduce ARI symptoms, such as cough, runny nose, secretion accumulation, and airway clearance disorders. Most studies showed a decrease in cough frequency, reduced secretion production, normalization of respiratory rate, and increased airway clearance with statistically significant results ($p < 0.05$). The combination of ginger and honey also provides anti-inflammatory, antimicrobial, antioxidant, and expectorant effects that support the secretion expulsion process. **Conclusion:** The administration of

ginger and honey decoction has been proven effective as a nonpharmacological adjunctive therapy in helping secretion expulsion and improving airway clearance in ARI patients. This intervention is safe, easily obtained, economical, and can be considered as complementary therapy, but it still does not replace the main medical therapy, especially in patients with severe symptoms.

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Introduction

Acute Respiratory Infection (ARI) remains one of the main health problems in toddlers in the world and in Indonesia. ARI is an infectious disease that attacks the upper and lower respiratory tract and is characterized by symptoms such as cough, runny nose, fever, shortness of breath, and increased secretion production that can disrupt the child's breathing process (Jaybhaye et al., 2022). Toddlers are a group vulnerable to ARI because their immune system has not developed optimally, making them more easily exposed to infectious agents. This condition can cause airway clearance disorders due to secretion accumulation which, if not handled properly, can cause more serious complications (Fitrianingrum et al., 2024).

According to various recent studies, cough and increased secretion production are the most common symptoms found in toddlers with ARI. Impaired secretion expulsion can cause airway obstruction, increased respiratory rate, the appearance of additional breath sounds such as rales, and decreased oxygen saturation (Fitrianingrum et al., 2024). Therefore, effective management is needed to help reduce symptoms and accelerate the recovery process. In addition to pharmacological therapy, nonpharmacological therapy has begun to be widely developed as an adjunctive therapy that is safe, cheap, and easy for families to apply at home (Wulandari et al., 2024).

One of the complementary therapies widely used is the administration of ginger and honey decoction. Ginger (*Zingiber officinale*) contains active compounds such as gingerol, shogaol, and zingerone which have anti-inflammatory, antioxidant, antimicrobial, and expectorant effects that can help thin and expel secretions from the respiratory tract (Jaybhaye et al., 2022). Meanwhile, honey contains flavonoids, phenolics, and natural enzymes that function as antibacterial, anti-inflammatory, and can improve body resistance. The combination of ginger and honey is known to work synergistically in reducing respiratory tract irritation, relieving cough, and accelerating mucus expulsion in ARI sufferers (Paramita Ananda, 2025).

Several recent studies have shown the effectiveness of the combination of ginger and honey in overcoming ARI symptoms in toddlers. A mixture of honey and ginger can accelerate the recovery of productive cough in children compared to conventional cough syrup therapy (Jaybhaye et al., 2022). Administration of ginger water mixed with honey for five days is also reported to significantly reduce cough and cold scores in toddlers with ARI (Afdhal et al., 2024). Other research results show that 90% of toddlers experienced improvement in cough symptoms after consuming ginger and

honey drink for five days (Finanditha, 2023). In addition, the administration of ginger and honey concoction is effective in reducing cough symptoms in 92% of toddlers and improving sleep quality and comfort of children during the recovery period (Paramita Ananda, 2025). Although various studies have shown the benefits of ginger and honey in reducing ARI symptoms, research results still vary and need to be analyzed more comprehensively. Some studies report a significant effect on reducing ARI symptoms, while other studies show different results in statistical analysis (Hapsari et al., 2023). Therefore, a literature review is needed to identify and analyze the latest scientific evidence regarding the effectiveness of ginger and honey decoction administration on secretion expulsion in ARI patients.

Based on this description, this literature review aims to analyze the effectiveness of ginger and honey decoction administration on secretion expulsion in ARI patients based on the latest research results. The results of this review are expected to become a source of scientific information and consideration in the application of nonpharmacological therapy as an effort to improve airway clearance in ARI patients.

Objective

The objective of this study was to identify, analyze, and synthesize research results regarding the effectiveness of ginger and honey decoction administration on secretion expulsion in patients with Acute Respiratory Infection (ARI), as well as to evaluate its potential as a complementary nonpharmacological therapy to improve airway clearance based on available scientific evidence.

Method

This study used a Literature Review method to identify, analyze, and synthesize research results regarding the effectiveness of ginger and honey decoction administration on secretion expulsion in patients with Acute Respiratory Infection (ARI).

Literature searching was carried out through the Google Scholar and PubMed databases as well as various relevant national and international journals. The keywords used in the literature search included "ISPA", "Infeksi Saluran Pernapasan Akut", "jahe", "madu", "ginger", "honey", "pengeluaran sekret", "bersihan jalan napas", and "acute respiratory infection".

The inclusion criteria in this study included: (1) research articles discussing the administration of ginger and honey in ARI patients; (2) articles published in the 2021–2025 range; (3) available in full text form; (4) using Indonesian or English; and (5) having clear research results that can be analyzed. Exclusion criteria included articles not in accordance with the research topic, duplicate articles, articles that cannot be accessed completely, and articles that do not present research result data clearly.

The articles obtained were then selected based on inclusion and exclusion criteria. After the selection process was carried out, 10 articles were obtained that met the criteria and were used in this literature review study.

Data from each article were analyzed descriptively by comparing research objectives, research design, respondent characteristics, forms of intervention, and research results obtained. The analysis results are presented in the form of tables and

narratives to provide an overview of the effectiveness of ginger and honey decoction administration on secretion expulsion in ARI patients.

Result

TABLE 1. Characteristics of Articles in the Literature Review

No.	Researcher & Year	Method	Research Results
1	Jaybhaye et al. (2022)	Quantitative, Prospective Experimental Design	The results showed that of 90 respondents, the group that received a mixture of honey and ginger experienced faster recovery of productive cough symptoms, namely an average of 5–6 days, compared to the group that only received cough syrup therapy with a recovery time of about 8–9 days. This study concluded that the mixture of honey and ginger is effective in helping reduce productive cough and has minimal side effects so that it can be used as complementary therapy in children with upper respiratory tract infections.
2	Fitrianingrum et al. (2024)	Case study	Research results that the administration of ginger and honey decoction of 150 cc, 2 times a day for 3 days is effective in reducing cough frequency, reducing secretions, normalizing respiratory rate from 34x/minute to 24x/minute, eliminating additional breath sounds (rales), and improving airway clearance without causing side effects.
3	Wulandari et al. (2024)	Case Study	Research results that the administration of warm ginger and honey drink of 250 ml/day for 3 days is effective in reducing cough frequency, reducing sputum production, normalizing respiratory rate, and improving airway clearance in both toddler respondents with ARI without causing side effects.
4	Jovani et al. (2025)	Quantitative, Quasi Experimental Design	The results showed that ginger and honey infusion is effective in reducing ARI symptoms in toddlers. The average ARI symptom score decreased from 10.00 before the intervention to 3.07 after the intervention. The Wilcoxon test showed a value of $p = 0.001$ (<0.05), which means there is a significant effect of ginger and honey infusion administration on reducing ARI in toddlers.
5	Lisdawati et al. (2024)	Case Study	The results showed that in respondents who received pharmacological therapy and ginger honey decoction for 3 days, there was a decrease in cough, runny nose, hoarseness, and body temperature from 38.7°C to 36.5°C. While respondents who only received pharmacological therapy experienced slower symptom improvement. The study concluded that ginger and honey decoction is more effective in accelerating the reduction of ARI symptoms compared to pharmacological therapy alone.
6	Emilya et al. (2024)	Quantitative, Experimental Design	The results showed that of 245 toddler respondents after administration of a combination of red ginger decoction and honey, there was a decrease in cough frequency in toddlers. The average value of cough frequency decreased from 24.13 times to 9.07 times, and the Wilcoxon test results obtained p value = 0.00 (<0.05) which indicates there is a significant effect of the

No.	Researcher & Year	Method	Research Results
			combination of red ginger decoction and honey on reducing cough frequency in toddlers with ARI.
7	Afdhal et al. (2024)	Quantitative, Quasi Experimental Design	The results showed that after administration of ginger water mixed with honey for 5 days, cough and cold symptoms in the intervention group decreased significantly with an average value from 8.10 to 0.10. The Wilcoxon test results showed a value of $p = 0.005$ (< 0.05) which means there is a significant effect of ginger water mixed with honey administration on reducing symptoms in toddlers with ARI.
8	Hapsari et al. (2023)	Quantitative, Quasi Experimental Design	The results showed that there was an effect of ginger and honey infusion administration on ARI in toddlers in Antutan Village during observation, but the statistical test results showed no effect of ginger and honey administration on ARI in toddlers with a P-Value = 0.214, so H_0 is accepted and H_1 is rejected.
9	Finanditha (2023)	Quasi Experimental	The results showed that 18 toddlers (90%) experienced reduced cough after being given ginger and honey drink for 5 days. The Wilcoxon test results showed $p=0.00$ so there is a significant effect of ginger and honey administration on reducing cough in toddlers.
10	Paramita Ananda (2025)	Quasi Experimental	Research results showed that before the intervention all respondents (100%) experienced cough. After being given ginger and honey concoction for 5 days, 22 toddlers (92%) experienced improvement or reduced cough, while 2 toddlers (8%) had not experienced improvement. The Wilcoxon test results showed a value of $p = 0.000$ ($p < 0.05$) which means there is a significant effect of ginger and honey concoction administration on reducing cough symptoms in toddlers.

Based on Table 1, most studies used quasi experimental, case study, and experimental designs. The intervention in the form of ginger and honey decoction administration was carried out for 3–5 days with the main outcomes being reduction of ARI symptoms, reduced secretion production, decreased cough frequency, and increased airway clearance. The results of the literature review show that the administration of ginger and honey decoction is effective in helping reduce ARI symptoms in most of the studies reviewed. Most articles reported statistically significant results ($p < 0.05$), indicated by decreased cough frequency, reduced sputum or secretion production, normalization of respiratory rate, and disappearance of additional breath sounds such as rales. In addition, several studies also showed that the combination of ginger and honey was able to accelerate the recovery process compared to pharmacological therapy alone. This effectiveness is supported by the content of active compounds in ginger which have anti-inflammatory, antioxidant, antimicrobial, and expectorant properties, and honey which has antibacterial and anti-inflammatory effects so that it helps thin and expel secretions from the respiratory tract. However, there is one study that showed statistically insignificant results ($p = 0.214$), so further research is still needed with stronger designs and larger sample sizes. Overall, the findings indicate that the administration of ginger and honey decoction is a nonpharmacological therapy that is safe, easily obtained, economical, and has the

potential to be used as complementary therapy to help secretion expulsion and improve airway clearance in ARI patients.

Discussion

The results of the literature review of 10 articles show that the administration of ginger and honey decoction is effective as a nonpharmacological therapy in helping secretion expulsion in patients with Acute Respiratory Infection (ARI), especially in toddlers. Most studies reported a decrease in cough frequency, reduced secretion production, normalization of respiratory rate, and increased airway clearance after administration of ginger and honey decoction for 3–5 days. These findings indicate that the combination of ginger and honey can be a complementary therapy that supports the recovery process of ARI patients.

One indicator of intervention success is the reduction of productive cough symptoms accompanied by more effective secretion expulsion. Research by Jaybhaye et al. (2022) showed that the administration of a mixture of honey and ginger was able to accelerate the recovery of productive cough in children, with an average recovery time of 5–6 days compared to 8–9 days in the group that only received cough syrup therapy. These results are supported by research by Fitrianingrum et al. (2024) and Wulandari et al. (2024) which reported that the administration of ginger and honey decoction for three days was effective in reducing cough frequency, reducing secretions, normalizing respiratory rate, and improving airway clearance without causing side effects.

The effectiveness of ginger and honey decoction is also evident from research using statistical analysis. Jovani et al. (2025) reported a decrease in the average ARI symptom score from 10.00 to 3.07 after intervention with a value of $p = 0.001$. Research by Emilya et al. (2024) showed that the combination of red ginger decoction and honey was able to reduce the average cough frequency from 24.13 times to 9.07 times with a value of $p = 0.00$. In addition, research by Afdhal et al. (2024), Finanditha (2023), and Paramita Ananda (2025) also showed that the administration of ginger and honey decoction significantly reduced cough symptoms in toddlers with ARI.

Physiologically, the effectiveness of ginger and honey decoction is supported by the content of active compounds in both ingredients. Ginger (*Zingiber officinale*) contains gingerol, shogaol, and zingerone which have anti-inflammatory, antioxidant, antimicrobial, and expectorant activities. The expectorant effect helps thin secretions so they are easier to expel from the respiratory tract, while the anti-inflammatory effect helps reduce inflammation of the respiratory tract mucosa. Honey contains flavonoids, phenolic compounds, and natural enzymes that have antibacterial and anti-inflammatory properties so that they can reduce throat irritation, relieve cough, and improve patient comfort. The combination of the two works synergistically in accelerating secretion expulsion and improving airway clearance.

Although most studies showed positive results, there is one study by Hapsari et al. (2023) which reported that observationally there was improvement in ARI symptoms after administration of ginger and honey, but the statistical test results showed a value of $p = 0.214$ so there was no significant effect. The difference in results is likely influenced by sample size, respondent characteristics, disease severity, duration of intervention administration, and differences in research design. Therefore,

these research results do not eliminate the potential benefits of ginger and honey decoction, but indicate the need for further research with stronger methodology.

Overall, nine out of ten articles analyzed showed that the administration of ginger and honey decoction is effective in helping reduce ARI symptoms, accelerate secretion expulsion, and improve airway clearance. Based on these findings, ginger and honey decoction can be considered as a nonpharmacological adjunctive therapy that is safe, easily obtained, economical, and can be applied at home or in health care facilities. However, its use is still recommended as complementary therapy and does not replace the main medical therapy, especially in patients with severe ARI symptoms or those experiencing complications.

Conclusion

Based on the results of the literature review of 10 research articles, it can be concluded that the administration of ginger and honey decoction shows effective potential as a nonpharmacological adjunctive therapy in helping reduce ARI symptoms and supporting secretion expulsion, especially in toddlers. Most studies reported a decrease in cough frequency, reduced secretion accumulation, improved airway clearance, and increased respiratory comfort after administration of ginger and honey intervention. This effectiveness is supported by the content of active compounds in ginger, such as gingerol, shogaol, and zingerone which have anti-inflammatory, antioxidant, antimicrobial, and expectorant effects. In addition, honey has antibacterial and anti-inflammatory properties that can help reduce respiratory tract irritation and relieve cough. The combination of the two provides a synergistic effect in helping the recovery process of ARI patients.

Although most studies showed positive results, there are studies that reported statistically insignificant results. Therefore, further research with stronger designs and larger sample sizes is needed to strengthen scientific evidence regarding the effectiveness of ginger and honey decoction on secretion expulsion in ARI patients.

Ginger and honey decoction can be considered as a complementary therapy that is safe, easily obtained, and economical in helping secretion expulsion in ARI patients. However, its use is recommended as adjunctive therapy and not as a substitute for the main medical therapy, especially in patients with severe symptoms or those experiencing complications.

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