

In Lactation insufficiency

Vinamic

A proprietary blend of Amino acids and ingredients Veg Capsules

Empower breastfeeding mothers to enable healthy supply of breast milk for their babies

Ensures milk outcome in just



- Increases Prolactin levels, hence facilitates formation of quality milk from the mammary glands
- Stimulates growth and development of mammary tissues in preparation of milk
- Regulates rate of blood flow across the lactating mammary gland hence increases volume of milk

For Milk Volume



Dosage
2 Capsules morning and 2 Capsules in the evening



Safety and Efficacy of a Combination of Amino Acids in Insufficient Lactating Mothers

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ABSTRACT

Milk production of the mammary gland is mainly determined by the milk synthesis and proliferation abilities of mammary epithelial cells (MECs). The availability of amino acids is critical for the production of milk. Amino acids enhance milk protein synthesis and mammary gland development through the mechanistic target of rapamycin (mTOR) pathway. Taurine enhances lactation by increasing prolactin secretion. Vitamins such as Thiamine and Pyridoxine are essential for maintaining and growing maternal and child health. However, there is a paucity of data regarding the safety and efficacy of amino acids and vitamins combination in lactating mothers with insufficient lactation. Hence, a prospective study was conducted to assess the safety and efficacy of a novel amino acids and vitamins combination. The results showed that with the intervention of this combination, 62% of participants showed onset of lactation within 45 minutes to 2 hours. The study suggests clinicians should consider this novel combination to improve lactation in insufficient lactating mothers.

Keywords: Lactation, amino acids, vitamins

Nursing infants' optimal development and health depend on their mother's milk production. During lactation, the body's normally quiescent functions become active and place a greater demand on amino acids and other substrates, which may have quantitative significance.¹ The availability of amino acids is critical in the efficiency with which milk proteins are synthesized.²

Increased dietary intakes and increased blood flow to the gland are responsible for a significant portion of this amino acid supply. The mammary glands massive demand for amino acids is primarily fulfilled by an increase in blood flow because the fractional rate at which amino acids are extracted increases.³ Hence, a prospective study was conducted among lactating mothers with no or insufficient lactation to establish the efficacy and safety of a novel combination of Taurine, DL-Methionine, L-Glutamine, Glutathione, Glycine, L-Cysteine, Thiamine and Pyridoxine.

METHODS

The study is a real-world prospective study to assess the efficacy of the novel combination and the occurrence of adverse events in lactating mothers with no or insufficient lactation. The study was a questionnaire-based study conducted among lactating mothers with no or insufficient lactation. The data was collected anonymously. Written consent was taken formally from the study participants after informing them about the study, the use of the medicine in their condition, and any related side effects that may occur. Analysis of the responses was carried out by calculation of simple percentages.

RESULTS

The study included 180 lactating mothers aged 19 to 38 years with no or insufficient milk production. Patients were intervened with two capsules twice daily for 5 days to 1 month. Most study participants reported (62%) increased milk output between 45 minutes to 2 hours (Fig. 1). With only three exceptions, most respondents gave good feedback. None of the patients reported any adverse effects after using a novel combination of Taurine, DL-Methionine, L-Glutamine, Glutathione, Glycine, L-Cysteine, Thiamine and Pyridoxine. Clinicians found it to be an effective remedy for immediately correcting lactation.

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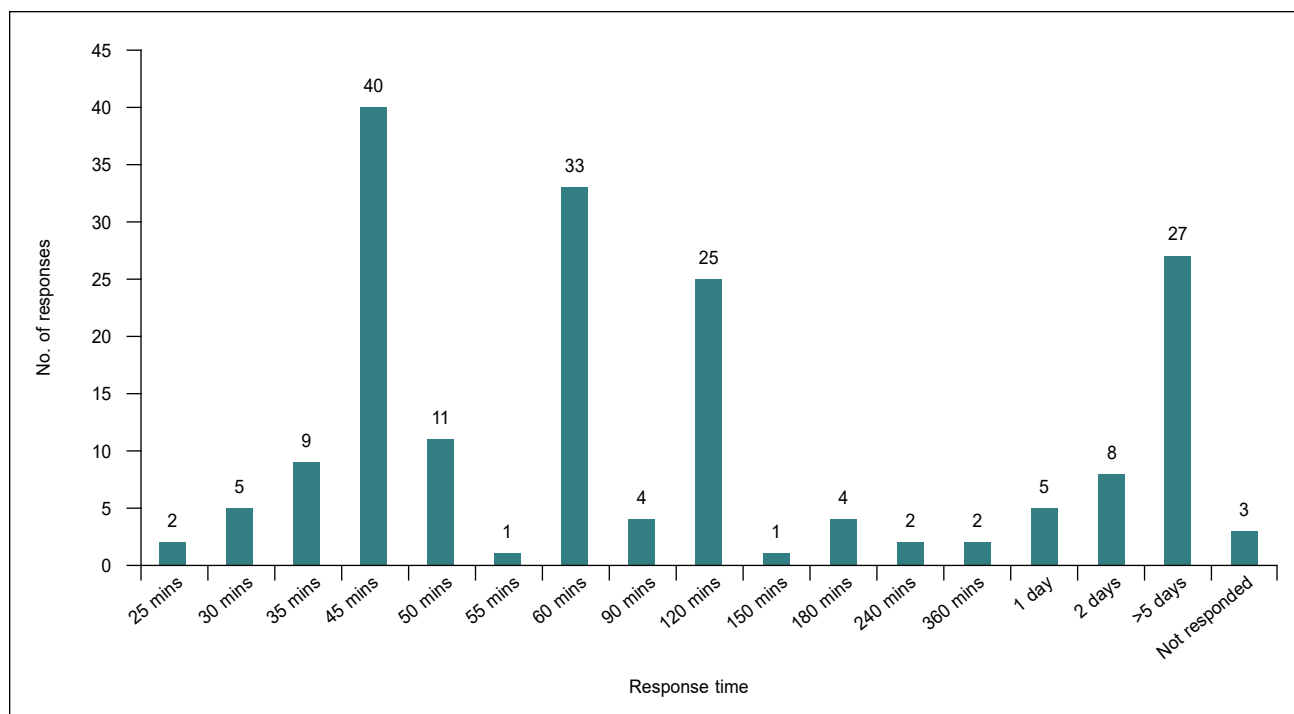


Figure 1. Post-intervention onset of lactation in the study participants.

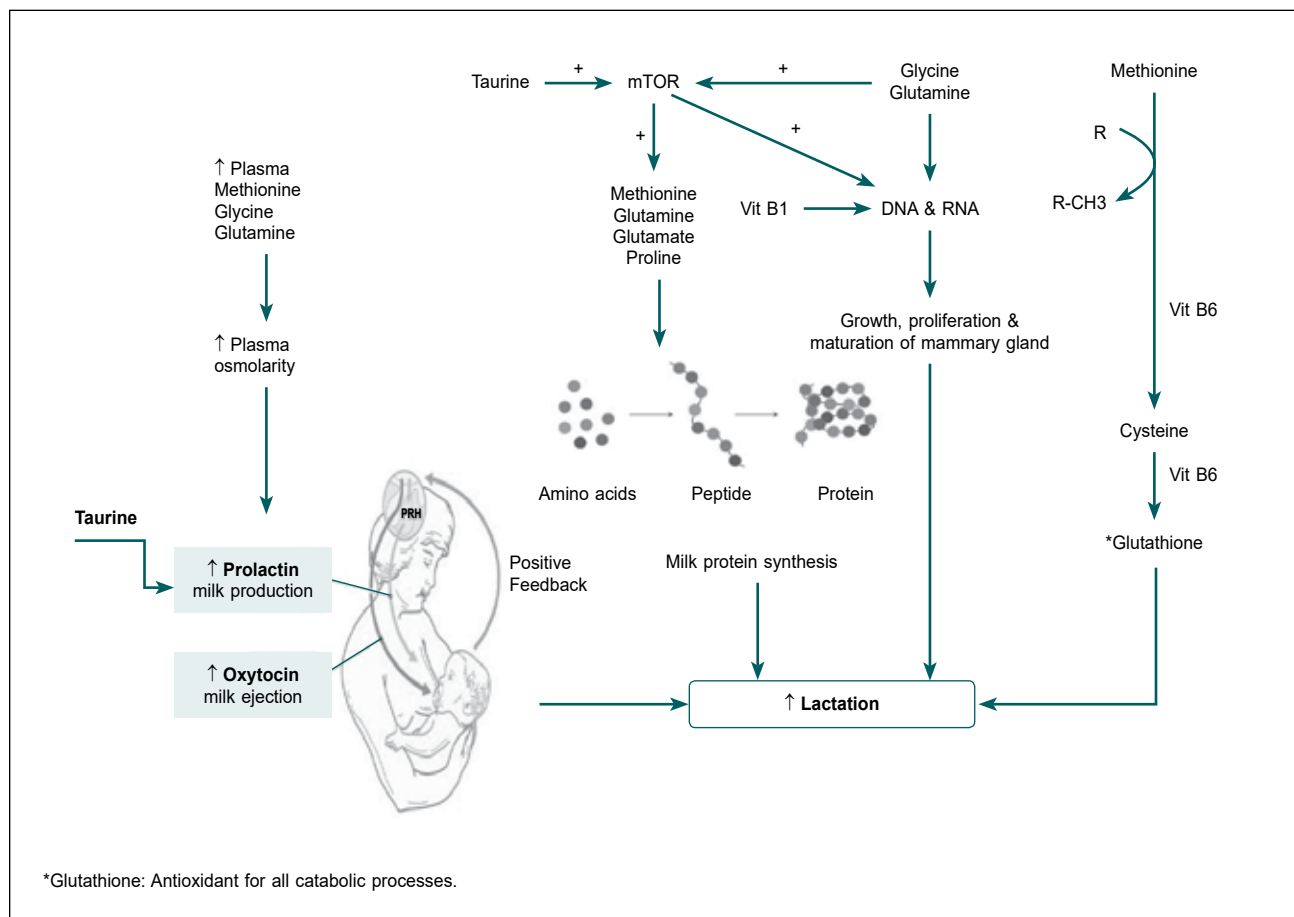


Figure 2. Role of amino acids and vitamins in lactation.

DISCUSSION

Milk production of the mammary gland is mainly determined by the milk synthesis and proliferation abilities of mammary epithelial cells (MECs). The mechanistic target of rapamycin (mTOR) is a serine/threonine protein kinase and a central hub of signaling leading to protein and lipid synthesis as well as cell proliferation. It has been reported that amino acids, growth factors, nutrients and other environmental cues regulate mTOR phosphorylation (activation).

Amino acids can directly stimulate the phosphorylation of mTOR, thereby promoting translation initiation and polypeptide formation. This results in the growth, proliferation and maturation of MECs and milk protein synthesis. Amino acids such as Methionine and Glutamine are the most important regulators of milk synthesis. Folic acid helps to maintain the Methionine pool. Methionine deficiency inhibits the mechanistic target of rapamycin complex 1 (mTORC1) signaling and reduces milk secretion.⁴

Glutamine is another milk's most prevalent amino acid for milk synthesis. Previous research indicates that lactation is accompanied by a modest catabolic state in which skeletal muscle proteins are degraded to produce more Glutamine in Glutamine deficiency.⁵

Glutathione is an essential antioxidant that eliminates free radicals produced by several catabolic processes in the brain. It prevents mood disorders, such as postpartum depression. L-Cysteine is a precursor for Glutathione.⁶

Pyridoxine is a water-soluble vitamin that treats and prevents vitamin B6 deficiency, anemia and peripheral neuropathy. Thiamine takes part in nucleic acid synthesis, helps generate energy for the body from nutrients, and aids in the growth and development of body cells. Thiamine and Pyridoxine are passed on to a nursing baby in the mother's milk.⁷

A study reported that Glycine maximizes protein accretion in milk. The findings focus on the significant implications of Glycine for newborn formulae, particularly for preterm and low-birth-weight infants.⁸

Milk production also depends on prolactin. Taurine enhances prolactin secretion. It also stimulates the phosphorylation of mTOR, promoting translation initiation and polypeptide formation.⁴ Roles of Taurine, Methionine, Glutamine, Glycine, Cysteine, Glutathione and vitamins in lactation^{9,10} have been depicted in Figure 2.

Orally ingested amino acids and vitamins are directly absorbed by the intestines. A set of transporters on the apical surface of enterocytes absorb amino acids from the intestinal lumen by coupling their transport with the transport of Na⁺ ions. Free amino acids can be absorbed very rapidly and appear in the bloodstream within minutes, reaching peak concentrations between 30 and 40 minutes.¹¹ Oral supplements of vitamins and amino acids are effective, cost-effective and easy to consume and can be taken with/after food or as directed by physicians.^{12,13}

Our clinical study showed that supplementation with Taurine, DL-Methionine, L-Glutamine, Glutathione, Glycine, L-Cysteine, Thiamine and Pyridoxine improves milk production in no or insufficient lactating women. A previous study by Nagarathnamma et al proved that amino acid supplementation improves lactation.⁹

Therefore, these data promote the creation of a dietary supplement, given that oral supplementation significantly increases its concentration and has beneficial effects on its total concentration in breast milk.

CONCLUSION

Our investigation suggests that the onset of action of the novel combination containing Taurine, DL-Methionine, L-Glutamine, Glutathione, Glycine, L-Cysteine, Thiamine and Pyridoxine can occur within 45 minutes to 2 hours. There are no adverse consequences. It is an oral medication; hence, it can be easily administered to the patient. This investigation confirms that the novel combination can increase milk production in inadequately nursing mothers without endangering the mother's or child's health. It is an oral medication; hence can be easily administered to the patient to improve insufficient lactation.

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CLINICAL STUDY

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