Chapter 16
Various Routes Of Drug Administration In Siddha Paediatric Practice

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INTRODUCTION

Background

The Siddha System of Medicine describes a healthy way of living. According to Siddha philosophy, five elements exist in nature: earth, water, fire, air, and ether. These elements form the basis of all corporeal beings and establish a close relationship between the macrocosm (external universe) and the microcosm (human body).

In the human body:

- Earth is represented in bones, flesh, nerves, skin, and hair.
- Water is represented in bile, blood, semen, glandular secretions, and sweat.
- Fire is represented in hunger, thirst, sleep, beauty, and indolence.
- Air is represented in contraction, expansion, and movement.
- Ether is represented in the interspaces of the stomach, heart, neck, and head.

Among these, air, fire, and water are considered fundamental because they form the three humours:

1. Vata
2. Pitta
3. Kapha

These humours govern the physiological and psychological functions of the body. According to Siddha pathology, imbalance among these humours leads to disease.

Under normal physiological conditions:

- Vata predominates in the pelvic and rectal regions.
- Pitta predominates in the stomach and visceral organs.
- Kapha predominates in the respiratory tract, throat, and head.

Siddhars believed Vata to be self-originated and closely associated with divine energy. Imbalance of Vata was considered the root cause of many diseases. Pitta represents heat-related functions such as digestion, metabolism, vision, and complexion. Kapha provides stability, lubrication, nourishment, and strength to the body.

The Siddha System of Medicine classifies medicines into two major categories:

1. Internal Medicines – 32 types
2. External Therapies and Procedures – 32 types

Apart from these, several specialized treatment methods are also practiced.

1. Varmam Therapy

Varmam refers to vital points located at the junctions of bones, muscles, tendons, nerves, and blood vessels. Siddhars believed diseases arise when these points are affected by external forces. Manipulative techniques called *Ilakkumurai* are used to restore balance. Siddha tradition describes 108 Varmam points.

Clinical applications include:

- Neuromuscular disorders
- Autism
- Mental retardation

2. Yogam

Yogam includes:

- Physical postures (Asanas)
- Breathing exercises (Pranayama)
- Deep relaxation
- Meditation

These practices improve flexibility, strength, coordination, awareness, and emotional balance. Yogam is commonly used for:

- Autism
- Learning disabilities
- ADHD
- Memory enhancement

3. Pranayamam

Prana refers to "breath." Siddha medicine considers breathing the most essential life function. Controlled breathing techniques are believed to improve vitality and health.

Pranayamam is useful in:

- Respiratory disorders
- ADHD
- Anxiety-related conditions

4. Special Puramaruthuvam Procedures (External Medicine)

- **Thokkanam** – used for neuromuscular disorders
- **Podi Thimirthal** – effective in spastic paralysis
- **Puravalaiyam** – useful in joint disorders

The fundamental principle of Siddha medicine is "Prevention is better than cure." Preventive guidelines are elaborately described in *Theraiyar Pinianuga Vithi Ozhukkam*, which explains daily and seasonal regimens for disease prevention. Thiruvalluvar also emphasized preventive medicine in the *Marunthu* chapter of *Thirukkural*.

Children are considered the future citizens of a nation. Siddha medicine provides detailed explanations regarding paediatric growth, development, disease prevention, and healthy lifestyle practices.

Siddhars developed numerous internal and external remedies for paediatric diseases. Herbal drugs form the major component of these formulations, along with minerals and metals. Many medicines are administered with breast milk during infancy because of its immunity-enhancing properties.

Common paediatric dosage forms include:

- Decoctions
- Tablets
- Medicated ghee
- Oils

Lipid-based preparations such as medicated ghee are believed to cross the blood–brain barrier and help manage neurological conditions.

Justification

Although Siddha literature extensively describes paediatric diseases and treatments, limited consolidated research exists regarding routes of drug administration in Siddha paediatric practice.

Understanding these routes is important because:

- They influence drug absorption and therapeutic effectiveness.
- They ensure safe and appropriate delivery in children.
- They bridge traditional and modern therapeutic approaches.

Therefore, this review aims to systematically analyze and document the various routes of drug administration described in Siddha paediatric texts.

AIM AND OBJECTIVES

Aim

To study and document the various routes of drug administration in Siddha paediatric practice.

Objectives

- To collect evidence from classical Siddha texts
- To categorize different routes of drug administration
- To compare Siddha methods with modern medical practices
- To highlight their clinical relevance and applications

MATERIALS AND METHODS

This study is a systematic review conducted using:

- Classical Siddha textbooks
- Research articles
- Online databases

Study Setting

- Government Siddha Medical College libraries
- Online academic sources

Study Period

- Four months

Data Analysis

Descriptive analysis of:

- Drug routes
- Dosage forms
- Clinical applications

LITERATURE REVIEW

Classification of Paediatric Diseases

Siddha paediatric diseases are classified into:

1. Agakaarana Noigal (Congenital)

- Neonatal disorders
- Infections
- Gastrointestinal disorders
- Respiratory diseases
- Skin diseases

2. Purakaarana Noigal (Acquired)

- Crying disorders
- Hiccups
- Digestive disturbances
- Constipation
- Feeding issues

Siddha Medicines

Siddha medicines are broadly classified into:

1. Internal Medicines (32 types)
2. External Medicines (32 types)

Common Internal Preparations

- Kudineer (Decoction)
- Chooranam (Powder)
- Mathirai (Tablet)
- Nei (Ghee)
- Ennai (Oil)
- Ilagam (Electuary)

Routes of Drug Administration

Siddha paediatric literature describes seven major routes of drug administration.

1. Oral Route (Enteral)

This is the most commonly used route.

Forms Used

- Kudineer
- Chooranam
- Mathirai
- Ilagam
- Manapagu

Modes

- Swallowing

- Sublingual administration
- Gargling
- Lozenges

Advantages

- Easy and convenient
- Cost-effective
- Non-invasive

Disadvantages

- Slow absorption
- Not suitable in emergencies
- Limited use in unconscious patients

2. Nasal Route

The nasal mucosa provides rapid absorption because of its rich vascular supply.

Forms Used

- Nasiyam (Nasal drops)
- Pugai (Fumigation)
- Oodhal (Blowing medicine)

Uses

- Respiratory disorders
- Sinusitis
- Headache

Advantages

- Rapid onset
- Direct action on respiratory tract

3. Ophthalmic Route

Used for eye diseases.

Forms

- Eye drops
- Collyrium (Mai)
- Medicated washes

Advantages

- Direct local action
- Fast response

Limitations

- Difficult administration in children
- Requires patient cooperation

4. Otic Route (Ear)

Forms

- Medicated oils
- Ear drops
- Fumigation

Uses

- Ear pain
- Ear discharge

Advantages

- Direct delivery to the affected area

5. Rectal Route

Forms

- Enema (Peechu)
- Medicated oils

Uses

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- Constipation
- Emergency drug delivery

Advantages

- Rapid absorption
- Bypasses first-pass metabolism

6. Vaginal Route

Used mainly in adolescent girls.

Forms

- Decoctions
- Powders

Uses

- Vaginal infections
- Leucorrhoea

7. Dermal Route (Topical)

One of the most widely used routes.

Forms

- Oils
- Pastes
- Powders
- Fomentation

Procedures

- Thokkanam (Massage)
- Podi Thimirthal
- Patru (Paste application)
- Vedhu (Steam therapy)

Advantages

- Direct local action
- Minimal systemic effects

Comparison with Modern Medicine

Route	Siddha	Modern
Oral	Kudineer, Mathirai	Tablets, Syrups
Nasal	Nasiyam	Nasal sprays
Ophthalmic	Mai	Eye drops
Otic	Ennai	Ear drops
Rectal	Peechu	Suppositories
Vaginal	Decoctions	Pessaries
Dermal	Oils, Pastes	Creams, Ointments

RESULTS AND DISCUSSION

The study shows that:

- Enteral and dermal routes are most commonly used.
- Nasal routes are widely practiced.
- Ophthalmic routes are moderately used.
- Rectal routes are comparatively less used.

Key Observations

- Route selection depends on disease location.
- Siddha medicine emphasizes localized treatment.
- Drug absorption varies according to:
  - Physicochemical properties
  - Site of administration

Clinical Importance

- Proper route selection improves bioavailability.

- Therapeutic efficacy is enhanced.
- Side effects may be reduced.

CONCLUSION

The Siddha system demonstrates a sophisticated understanding of drug administration routes, even in ancient times. Route selection is based on:

- Disease condition
- Drug properties
- Patient factors

This reflects:

- Advanced pharmacological understanding
- Precision-oriented therapeutic principles

The study highlights the importance of integrating traditional Siddha knowledge with modern scientific research to improve paediatric healthcare outcomes.

RECOMMENDATIONS

- More clinical studies on Siddha drug administration routes
- Integration with modern drug delivery systems
- Development of newer formulations
- Standardization of paediatric dosages

SUMMARY

Siddha paediatric practice includes diverse routes of drug administration such as oral, nasal, dermal, ophthalmic, otic, rectal, and vaginal routes. These routes are selected based on disease condition and patient factors to ensure effective treatment. The Siddha system demonstrates remarkable scientific insight, and further research may strengthen its application in modern paediatric healthcare.