ii. Congenital and Acquired diseases

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Definition and General Classification

Congenital Diseases

- **Definition**: Conditions present at or before birth, resulting from **genetic** (inherited or de novo mutations), **epigenetic**, **environmental** (intrauterine exposures), or multifactorial influences.
- **Examples**:
  - **Genetic Disorders** (Down syndrome, Thalassemia),
  - **Structural Abnormalities** (Congenital heart defects, neural tube defects),
  - **Metabolic Defects** (Phenylketonuria, galactosemia).

Acquired Diseases

- **Definition**: Conditions that develop **after birth**, triggered by **external** (infections, toxins, injuries, lifestyle) or **internal** (immune dysregulation, degenerative changes) factors.
- **Examples**:
  - **Infectious** (tuberculosis, influenza),
  - **Lifestyle-Related** (type 2 diabetes, atherosclerosis),
  - **Autoimmune** (rheumatoid arthritis, lupus),
  - **Malignancies** (lung cancer, breast cancer).

Modern Biomedical Perspective

Congenital Pathophysiology

1. **Genetic Causes**
   - **Single-Gene Mutations**: e.g., cystic fibrosis, hemophilia.
   - **Chromosomal Aberrations**: e.g., Trisomy 21 (Down syndrome).
   - **Multifactorial**: e.g., cleft lip and palate influenced by genes + maternal environment.
2. **Environmental Factors**
   - **Teratogens**: Alcohol, certain drugs (thalidomide), infections (Rubella), radiation in utero.
   - Impact morphological or functional development, leading to congenital anomalies.

Acquired Disease Etiologies

1. **Infection**
   - Viruses (HIV, influenza), bacteria (TB), fungi, parasites.
   - Transmission can be direct, via vectors, or opportunistic in immuno-compromised states.
2. **Lifestyle / Non-Communicable**
   - Obesity, insulin resistance, atherosclerosis linked to diet, sedentary habits.
   - Neurodegenerative disorders (Alzheimer's, Parkinson's) with multifactorial or uncertain triggers.
3. **Trauma and Environmental Exposures**
   - Accidents, mechanical injuries, toxins (heavy metals, chemicals), leading to chronic illnesses or organ damage.

Āyurvedic Interpretation

Congenital (Sahaja) Diseases

1. **Sahaja / Ādhidaivika**

- *Caraka Saṃhitā* references congenital conditions as *sahaja* or *pāradāurika* (genetic/familial predispositions).
- Etiology: *Garbha doṣa* (maternal–paternal factors, intrauterine environment), *Kārmic* influences in certain philosophical contexts.

2. **Examples in Ayurveda**
   - *Angavikṛti* (limb deformities), *Andhatva* (blindness), *Mūkata* (congenital mutism).
   - Management typically supportive, focusing on rasāyanas or therapies to strengthen healthy tissues and correct mild doṣic aggravations.

Acquired (Āgantuka / Adhija) Diseases

1. **Doṣa Imbalance Over Lifetime**
   - Disease arises from mismatch in diet (*ahara*), lifestyle (*vihara*), seasonal changes, or emotional stress leading to doṣa vitiation.
   - Infectious-like references exist under *kṛmi* (helminths, microorganisms) or *āgantu roga* (external insults, trauma).
2. **Nidāna Panchaka**
   - *Nidāna* (causative factors), *Pūrvarūpa* (prodromal), *Rūpa* (manifested symptoms), *Upaśaya–Anupaśaya* (palliative/exacerbating factors), and *Samprāpti* (pathogenesis) frame the progression from doṣa aggravation to clinically observable disease.

Intersection of Congenital and Acquired Realms

Overlapping Mechanisms

- Modern science recognizes certain “congenital predispositions” that may remain latent until triggered by **environmental** or **lifestyle** factors → merges the lines between purely “congenital vs. acquired.”
- Ayurveda correlates with the notion that *prakṛti* or *sahaja constitution* can predispose individuals to certain diseases, but triggers or manifestation (vyakti) often arise from acquired doṣa disturbances.

Examples

1. **Type 1 Diabetes**
   - Genetic predisposition (HLA associations). Autoimmune destruction of β-cells.
   - Ayurveda sees *sahaja prameha* for congenital/familial diabetes with early onset, plus acquired forms from kapha-aggravating diet.
2. **Congenital Hypothyroidism** vs. **Primary Hypothyroidism**
   - Inborn TSH receptor/gland defects vs. autoimmune or iatrogenic in adult life.
   - Ayurveda might label persistent growth or metabolic issues as *janmaja vikāra* or *apathya-related doṣa vyādhi* if triggered postnatally.

Clinical and Research Implications

1. **Diagnosis**
   - Modern: Genetic tests, fetal ultrasound, newborn screening for congenital conditions; serological or imaging for acquired.
   - Ayurveda: Detailed natal history (garbhopaghāta) plus *prakṛti, doṣa–dhātu–mala* assessment.
2. **Therapeutic Approaches**
   - **Congenital**:
     - Allopathic: Surgical corrections, enzyme replacements, gene therapy in near future.
     - Ayurveda: Largely palliative or supportive (rasāyana for immunity, specialized bāla-chikitsā).
   - **Acquired**:
     - Allopathic: Pharmacotherapy, immunomodulators, physiotherapy, etc.
     - Ayurveda: Pancha karma, doṣa-based regimens, rasāyana, lifestyle modifications.
3. **Prevention**
   - Modern: Genetic counseling, prenatal screening, lifestyle interventions to reduce onset of lifestyle diseases.
   - Ayurveda: *Garbhini paricharyā* (antenatal guidelines), *rasāyanas* for robust fetal and maternal health, doṣa

management to avoid postpartum or early childhood issues.

Challenges and Future Directions

1. **Integration in Public Health**
   - India's maternal and child health programs can incorporate *garbhādhāna saṃskāra*, *masānumasika garbha paricharyā*, etc., bridging modern screening for congenital anomalies.
   - Awareness of *doṣa* imbalance in later life diseases fosters early lifestyle correction.
2. **Research**
   - Deeper genomic–Ayurvedic synergy to identify congenital risk factors in certain *prakṛti* lineages.
   - Large-scale prospective studies exploring how doṣa-based vulnerabilities translate to higher incidence of acquired disorders.
3. **Policy**
   - Enhanced newborn screening for congenital metabolic errors (CH, PKU) plus robust postpartum doṣa management in AYUSH hospitals.
   - Training for AYUSH practitioners in modern congenital disease diagnostics to integrate therapies for better outcomes.

Conclusion

Congenital diseases arise from **intrauterine** or **genetic** factors, whereas **acquired** diseases develop after birth due to **environmental, lifestyle, or pathogen** exposures. Modern biomedicine emphasizes **genetic tests**, **imaging**, and **screening** for early detection, while **Āyurveda** frames these categories as **sahaja (innate)** vs. **āgantuka (acquired)** or doṣa-based classification. A **holistic approach**—harnessing advanced genetic tools, *prakṛti* understanding, prophylactic measures, and synergy of both systems—offers the **most comprehensive** means to **prevent, diagnose, and treat** diseases across the congenital–acquired spectrum.