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INTERNATIONAL JOURNAL OF DIAGNOSTICS AND RESEARCH**Comparative Study On Insulin Resistance And The Eight Problems Of Obesity
(Atisthulya) As Described In Ayurveda With Special Reference To Charaka****Samhita**Dr.Nilesh Dalvi ¹¹Professor & Principal chatrapati Shivaji Maharaj Medical College And Hospital,Rewa,MP

Sardar Patel University, Balaghat, MP.

Corresponding author: Dr.Nilesh Dalvi

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Abstract**Background:**

Obesity and insulin resistance represent global metabolic challenges. Ayurveda, through Charaka *Samhitā*^[1], recognized obesity (*Sthaulya/Atisthūlya*) as a serious pathological state and listed eight defects (*Ashta Doṣas*) associated with it: *Āyusho hrāsaḥ*, *Jāvo'parodhaḥ*, *Kṛcchra-vyavāyatā*, *Daurbalyam*, *Daurgandhyam*, *Svedābādhaḥ*, *Ati-ślathatā*, *Ati-pipāsā ca*^[2]. This study explores the conceptual parallels between these eight classical features and the biomedical pathophysiology of insulin resistance (IR)^[3]. Each of the eight defects is correlated with contemporary medical understanding of metabolic dysfunction and energy imbalance.^[4]

Objectives:

To analyze Charaka's *Ashta Doṣas* of *Atisthūlya* from an Ayurvedic and biomedical perspective.

To correlate these with modern clinical manifestations of insulin resistance and obesity-related metabolic syndrome.

Methods: A narrative comparative review was performed using Ayurvedic classical texts (*Charaka Samhitā*, *Sushruta Samhitā*, *Ashtāṅga Hṛdaya*) and modern biomedical literature (PubMed, Google Scholar). The eight classical defects were interpreted through Ayurvedic commentaries and mapped against established pathophysiologic features and complications of insulin resistance.

Results: Each of the eight classical defects of *Atisthūlya* described by *Āchārya Charaka* closely corresponds to biomedical manifestations of insulin resistance, such as reduced longevity, decreased physical capacity, sexual dysfunction, fatigue, body odour, excessive sweating, tissue laxity, and excessive thirst—all common in metabolic syndrome and type 2 diabetes mellitus.

Conclusion: Charaka's description of *Atisthūlya* remarkably parallels the systemic complications of insulin resistance. This highlights Ayurveda's sophisticated understanding of metabolic imbalance and provides a conceptual bridge for integrative preventive and therapeutic research.

Keywords: Ayurveda, *Sthaulya*, *Atisthūlya*, Insulin resistance, *Medoroga*, Metabolic syndrome, *Ashta Doṣa*

Introduction :

Insulin resistance (IR) forms the core of modern metabolic disorders such as obesity, type 2 diabetes mellitus (T2DM), dyslipidaemia, and cardiovascular disease^[5,6]. It results from impaired insulin *signalling* in skeletal muscle, liver, and adipose tissue, leading to glucose intolerance and systemic inflammation.

Ayurveda, the ancient Indian medical system, identified a parallel disorder called *Sthaulya* or *Atisthūlya*, characterized by the abnormal increase of Meda *dhātu* (adipose tissue)^[7]. In Charaka *Samhitā Sūtrasthāna Adhyāya* 21, Acharya Charaka lists eight defects associated with the obese individual:

“The obese suffer from diminution of life-span, restricted movement and activity, difficulty in sexual intercourse, debility, foul body *odour*, excessive sweating, looseness of body, and excessive thirst.” (Charaka *Samhitā, Sūtrasthāna* 21/4)^[8,9]

This shloka provides one of the earliest recorded holistic descriptions of obesity’s systemic impact—paralleling the modern understanding of insulin resistance and metabolic dysfunction.

Methodology :

Study Design : A narrative comparative review of classical Ayurvedic and contemporary biomedical literature.

Data Sources : Classical Ayurvedic texts (Charaka *Samhitā*, Sushruta *Samhitā*, *Ashtāṅga Hṛdaya*, Madhava *Nidāna*) with commentaries (*Chakrapāṇi*, *Dalhaṇa*), and peer-reviewed biomedical literature on insulin resistance and obesity were reviewed.

Data Synthesis : The Ashta *Doṣas* were interpreted

in physiological terms using classical commentaries and mapped with biomedical manifestations of insulin resistance and its complications.

Results And Discussion :

Mapping the Ashta *Doṣas* of *Atisthūlya* with Modern Biomedical Correlates.

Ayurvedic description(Charak Samhita)	Ayurvedic Interpretation	Biomedical Equivalent/Correlation with Insulin Resistance
1. <i>Āyuso hrāsaḥ</i> (Diminished lifespan)	Obesity shortens life due to <i>Agnimandya</i> and disturbed <i>Dhātu poshana</i> , <i>medha excess</i> ^[10]	IR leads to accelerated aging, increased mortality ^[11] from T2DM, CVD, and cancer.
2. <i>Jāvo'parodhaḥ</i> (Restricted mobility or sluggishness)	. Due to heaviness (Guru guna) and excessive Meda obstructing channels	Fatigue, reduced muscle ^[12] insulin sensitivity, and exercise intolerance
3. <i>Kṛcchra-vyavāyatā</i> (Difficulty in sexual activity)	Kapha-Meda accumulation causes <i>Klaibya</i> (sexual weakness) ^[13]	Hypogonadism, erectile dysfunction ^[14] , reduced testosterone, infertility (IR-related).
4. <i>Daurbalyam</i> (Weakness or debility)	) Nutrient flow obstruction causes <i>Dhātu kshaya</i> and weakness.	.Chronic fatigue, mitochondrial dysfunction ^[15] , sarcopenic obesity.
5. <i>Daurgandhyam</i> (Foul body odour due to <i>medodushṭi</i>) ^[16]	Impure Meda <i>dhātu</i> and blocked <i>Srotas</i> produce offensive sweat.	.Hyperhidrosis, bromhidrosis ^[17] due to altered metabolism and skin microflora.

Ayurvedic description(Charak Samhita)	Ayurvedic Interpretation	Biomedical Equivalent/Correlation with Insulin Resistance
6. <i>Svedābādhaḥ</i> (Excessive sweating)	Disturbed Agni and Meda <i>vridhhi</i> increase heat production.	Common in IR, obesity, and hypermetabolic states; autonomic imbalance ^[18] .
7. <i>Ati-ślathatā</i> (Flaccidity of body)	Loss of tone in muscles and ligaments due to Meda excess.	Reduced muscle tone, fatty infiltration, and decreased structural integrity. Sarcopenic obesity, tissue laxity ^[19]
8. <i>Ati-pipāsā</i> (Excessive thirst)	<i>Agnimandya</i> and <i>Prameha-purvarūpa</i> leading to dehydration.	Polydipsia—an early feature of insulin resistance and diabetes mellitus. ^[20]

Conceptual Overlaps :

Ayurvedic Concept	Biomedical Correlate
<i>Agnimandya</i> (low digestive/metabolic fire)	Decreased metabolic rate, mitochondrial dysfunction
<i>Meda dhātu vridhhi</i>	Adipose tissue hypertrophy, ectopic fat deposition
<i>Srotorodha</i> (channel blockage)	Endothelial dysfunction, microvascular inflammation
<i>Prameha purvarūpa</i>	Insulin resistance, metabolic syndrome features

Thus, Charaka's eight defects illustrate systemic metabolic disturbance equivalent to insulin resistance pathophysiology.

Integrative Discussion :

Charaka's vision of *Atisthūlya* prefigures the modern metabolic syndrome model by thousands of years. The Ashta *Doṣas* are not merely descriptive but reflect a deep understanding of multi-system pathology:

- *Āyuso hrāsaḥ* = chronic inflammation & shortened lifespan (increased all-cause mortality).
- *Ati-pipāsā* = dysregulated glucose homeostasis and osmotic diuresis.
- *Daurbalya* and *Ati-ślathatā* = sarcopenia and tissue insulin resistance.
- *Jāvo'parodha* and *Kṛcchra-vyavāyatā* = reduced cardiovascular endurance & reproductive dysfunction.

Modern biomedicine interprets obesity as an endocrine organ dysfunction involving adipokines and inflammatory cytokines — concepts parallel to *Meda dhātu dushti* and *Agnimandya* in Ayurveda.

Future Research Scope :

Clinical Correlation Studies:

- Assess *Ayurvedicauthor Doṣa* scoring versus biochemical markers (HOMA-IR, fasting insulin, HbA1c).

Ayurvedic Interventions:

- Study effects of *Langhana*, *Lekhana* therapies, *Udwartana*, *Panchakarma*, and *Medohara dravyas* on insulin sensitivity.

Translational Research:

- Develop measurable parameters for *Meda dushti*, *Agnimandya*, and *Srotorodha* using imaging and metabolic biomarkers.

Conclusion :

The Ashta *Doṣas* of *Atisthūlya* described by *Āchārya Charaka- Āyuso hrāsaḥ*, *Jāvo'parodhaḥ*, *Kṛcchra-vyavāyatā*, *Daurbalyam*, *Daurgandhyam*, *Svedābādhaḥ*, *Ati-ślathatā*, *Ati-pipāsā* ca— represent a profound, ancient recognition of the same systemic derangements that modern science defines as insulin resistance and metabolic syndrome. *Ayurveda's* emphasis on *Agnimandya*, *Meda dhātu dushti*, and *Srotorodha* corresponds to

mitochondrial dysfunction, adipose inflammation, and endothelial damage. Thus, the ancient and modern frameworks converge on the same biological truth: obesity and metabolic imbalance shorten life and impair vitality.

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Declaration :

Conflict of Interest : None

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Dr. Nilesh Dalvi Inter. J.Digno. and Research

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