Takayasu Arteritis A Clinical Review and Nursing Management Framework

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***Abstract*—Takayasu Arteritis (TA) is a rare, chronic large-vessel vasculitis predominantly affecting the aorta and its main branches in young females. Early diagnosis is frequently missed due to non-specific constitutional symptoms in the "pre-pulseless" phase. This review highlights the critical role of nursing assessment in identifying vascular discrepancies and managing long-term biologic therapy to prevent ischemic complications.**

***Index Terms*—Takayasu Arteritis, Vasculitis, Nursing Care, Biologic Therapy, Ischemia.**

I. INTRODUCTION AND PATHOGENESIS

Takayasu Arteritis is an immune-mediated granulomatous vasculitis. The pathogenesis involves T-cell-mediated infiltration of the arterial wall, leading to intimal thickening, fibrosis, and stenosis. Pro-inflammatory cytokines, specifically Interleukin-6 (IL-6) and TNF-α, drive the inflammatory process, making them primary targets for modern biologic interventions.

II. CLINICAL PRESENTATION: THE TWO PHASE MODEL

A. Phase I (Systemic)

Clinical manifestations include fatigue, low-grade fever, and weight loss. Inflammatory markers such as ESR and CRP are typically elevated during this phase.

B. Phase II (Occlusive)

Features include limb claudication, absent peripheral pulses ("pulseless disease"), and audible bruits. A blood pressure discrepancy greater than 10 mmHg between limbs is considered a hallmark clinical finding.

III. CASE ILLUSTRATION

A 26-year-old female presented with a six-month history of fatigue and recent left-arm weakness. Examination revealed a blood pressure of 140/90 mmHg in the right arm versus 90/60 mmHg in the left arm. CT angiography confirmed Type I Takayasu Arteritis. Stabilization was achieved through corticosteroids and methotrexate, supported by vigilant nursing monitoring of peripheral perfusion.

IV. INTEGRATED NURSING CARE PLAN (NANDA-I)

Nursing Diagnosis	Clinical Intervention	Rationale
Ineffective Peripheral Tissue Perfusion	Serial four-limb BP measurement and pulse grading	Early detection of stenotic progression or relapse
Risk for Ineffective Cerebral Perfusion	Assessment for syncope, visual changes, and carotid bruits	Monitors for carotid and vertebral artery involvement
Risk for Infection	Education on neutropenic precautions during biologic therapy	Immunosuppression caused by biologics such as Tocilizumab increases infection risk

V. THERAPEUTIC LANDSCAPE

A. Pharmacotherapy

High-dose corticosteroids remain the gold standard treatment. Steroid-sparing agents such as

Methotrexate and Azathioprine are essential to minimize long-term corticosteroid-related adverse effects.

B. Biologic Therapy

Interleukin-6 inhibitors, especially Tocilizumab, have demonstrated high efficacy in refractory Takayasu Arteritis cases.

C. Surgical Management

Revascularization procedures are reserved for patients with end-organ ischemia and are ideally performed during the inactive phase of the disease.

VI. CONCLUSION

The prognosis of Takayasu Arteritis depends on early detection and multidisciplinary management. Nurses play a pivotal role in recognizing subtle clinical changes, monitoring vascular complications, and providing education necessary for long-term immunosuppressive therapy adherence.

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