

Personalized Management of CIN2: An Evaluation of the Efficacy of Surgery, Physical Therapy, and Active Surveillance

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Abstract:

Objective: This study aimed to evaluate the clinical significance of excisional surgical treatment, physical therapy, and observational management in patients diagnosed with cervical intraepithelial neoplasia (CIN) grade 2.

Methods: A cohort of women diagnosed with CIN2. Participants were categorized into three groups based on the management strategy received: the Surgery Group, the Physical Therapy Group, and the Observation Group. All patients were followed up for 6 to 12 months, undergoing concurrent cytology and human papillomavirus (HPV) testing. Colposcopy and/or biopsy were performed for women who tested positive for HPV or had cytological findings of atypical squamous cells of undetermined significance (ASC-US) or higher. Disease regression rates and HPV clearance rates were compared among the three groups.

Results: The Surgery Group demonstrated the highest rates of disease regression (96.9%) and HPV clearance (84.0%) at the 6–12-month follow-up. The Physical Therapy Group also showed high efficacy (disease regression: 97.4%; HPV clearance: 75.3%), with outcomes comparable to the Surgery Group in terms of disease regression, while exhibiting advantages such as being less invasive and having a lesser impact on fertility. The Observation Group, although having lower regression (74.0%) and clearance rates (45.5%) overall, showed a significantly higher rate of spontaneous regression in younger patients (e.g., under 25 years old 95.8%), supporting its viability as a management option for select individuals.

Conclusion: The management of CIN2 should be individualized. While surgical intervention ensures high efficacy, physical therapy offers an effective and less invasive alternative. Active surveillance is a reasonable strategy, particularly for young patients likely to experience spontaneous regression, thereby avoiding potential overtreatment and surgical risks.

Key words: Cervical Intraepithelial Neoplasia Grade 2 (CIN2), Physical Therapy, Active Surveillance, Disease Regression, HPV

Table 1 Pathological Outcomes and Disease Regression in Study Subjects at 6 to 12 Months After Treatment.

	Overall (n=317)	Surgery Group(n=163)	Physical Therapy Group(n=77)	Observation Group(n=77)	P-value
Disease status (%)					< 0.001 ^a
Disease progression-CIN3	6(1.9)	2(1.2)	1(1.3)	3(3.9)	
Disease persistence-CIN2	21(6.6)	3(1.8)	1(1.3)	17(22.1)	
Disease regression(≤LSIL)	290(91.5)	158(96.9)	75(97.4)	57(74.0)	
HPV negative (No Biopsy Performed)	177(55.8)	124(76.1)	24(35.1)	29(37.7)	
Chronic Cervitis	85(26.8)	30(18.4)	42(54.5)	13(16.9)	
CIN1	28(8.8)	4(2.5)	9(11.7)	15(19.5)	

Abbreviation: CIN - Cervical Intraepithelial Neoplasia. ^aDetermined by Chi-square test.