

# Clinical Unmet Needs and Non-Invasive Treatment Preferences in HSIL Management: A Mixed-Methods Study in China

Wei Chen<sup>1</sup>, Jian Ming<sup>1</sup>, Xuanqi Qiao<sup>1</sup>, Xuefei Bai<sup>1</sup>, Hongyu Wang<sup>1</sup>, Jia Fang<sup>2</sup>, Tian Sun<sup>2</sup>, Jing Wu<sup>3</sup>

<sup>1</sup>IQVIA, Shanghai, China. <sup>2</sup>Jiangsu Yahong Meditech Co., Ltd., Jiangsu, China. <sup>3</sup>School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China

## Key findings

- Surgery dominates HSIL management in China, suggesting overtreatment.
- The lack of non-invasive options represents a key gap in HSIL management, highlighting a strong unmet need for safe, effective, fertility-preserving therapies.

## INTRODUCTION

High-grade squamous intraepithelial lesion (HSIL) is a prevalent, potentially progressive precancerous cervical lesion requiring timely management to prevent progression to cervical cancer[1]. In China, rising cervical cancer incidence underscores the importance of effective precancerous lesion management[2]. While invasive surgery remains standard treatment, significant demand persists for non-invasive alternatives with favorable efficacy.

## OBJECTIVES

- This study aimed to explore unmet clinical needs in HSIL management in China and assessed the preference for non-invasive therapies among physicians and patients.

## METHODS

- A mixed-methods study was conducted between April and June 2025, integrating qualitative and quantitative approaches.
- In-depth interviews with 5 senior physicians and 8 HSIL patients across 7 provinces, primarily from tier 1 and tier 2 cities, explored the treatment landscape and unmet needs. Subsequently, a nationwide online survey of 80 physicians and 130 HSIL patients from 21 provinces, predominantly in tier 1 and tier 2 cities, assessed treatment patterns, perceived unmet needs, and preferences, ensuring broad geographic representativeness.
- Invalid responses were excluded, and sampling continued until predefined quotas were met. Categorical variables were summarized as counts and percentages, and continuous variables as mean values unless otherwise specified.

## RESULTS

### Baseline Characteristics

#### ➤ In-depth interviews

- Five experts from tertiary general or maternal and child health hospitals participated, all holding senior professional titles, with chief physicians accounting for 80%. Eight patients were also interviewed (mean age: 35 years; 62.5% CIN2, 37.5% CIN3), of whom 62.5% had undergone surgical treatment.

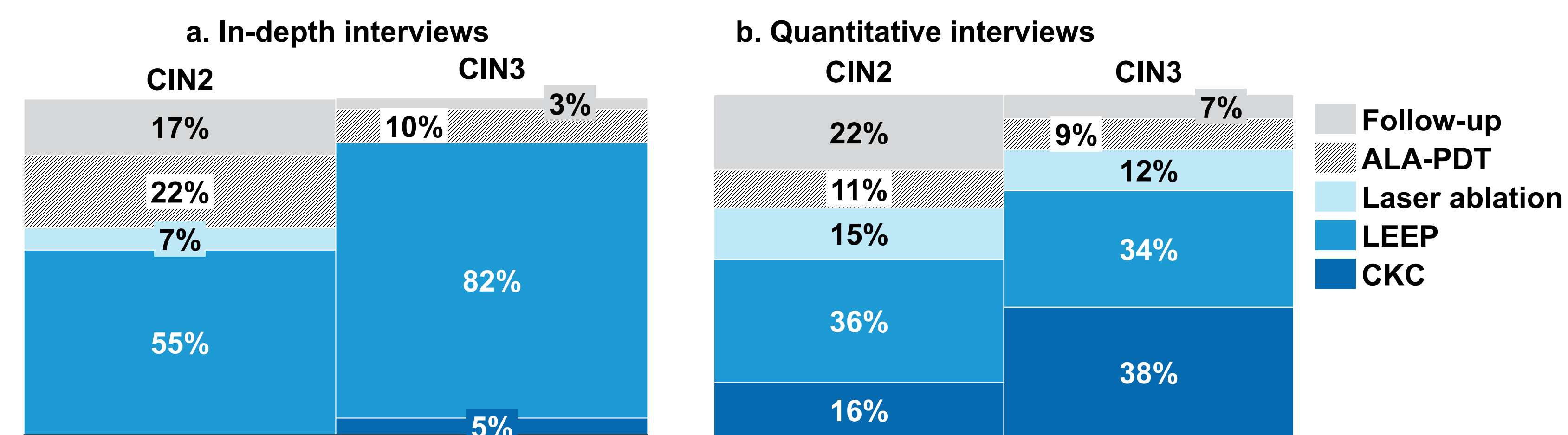
#### ➤ Quantitative survey

- The survey included 80 physicians from tertiary hospitals (51% general; 49% maternal and child health), all with senior professional titles and >5 years of clinical experience, recruited across 20 provincial-level regions in China. A total of 130 HSIL patients were surveyed (mean age: 36.3 years; 53.8% CIN2, 46.2% CIN3), with 63.1% previously treated surgically (LEEP or CKC).

### Current treatment landscape

- Surgery is the predominant treatment modality, with utilization increasing by lesion grade, accounting for 52% of CIN2 cases (36% LEEP; 16% CKC) and 72% of CIN3 cases (34% LEEP; 38% CKC) in the quantitative interviews (**Figure 1b**).

Figure 1. Distribution of treatment modalities by lesion grade



### Physician-perceived unmet needs

- Overall, approximately 50% of respondents identified low patient acceptance of surgery and the lack of effective non-invasive alternatives as key unmet needs, driving both overtreatment and undertreatment (**Figure 2**).
- Perceptions differed by specialty: clinicians in cervical disease and gynecologic oncology emphasized the absence of effective non-surgical treatments, whereas general gynecologists primarily cited persistent HPV infection and post-treatment recurrence (**Figure 2**).

Figure 2. Physician-perceived unmet needs in HSIL

Unmet needs	All departments (N=80)	Gynecology (n=34)	Cervical disease clinic (n=36)	Gynecologic oncology (n=10)
Low acceptance of surgery; limited non-surgical options	40 (50%)	13 (38%)	21 (58%)	6 (60%)
No effective HPV therapy; persistent infection and recurrence risk	38 (48%)	23 (68%)	14 (39%)	1 (10%)
Increased obstetric risks after cervical surgery	24 (30%)	16 (47%)	3 (8%)	5 (50%)
Multiple sessions and complexity of ALA-PDT	23 (29%)	8 (24%)	14 (39%)	1 (10%)
No HSIL indication for ALA-PDT	19 (24%)	7 (21%)	7 (19%)	5 (50%)
Surgical bleeding and infection risks	12 (15%)	5 (15%)	2 (6%)	5 (50%)

### Patient-perceived unmet needs

- Based on patient in-depth interviews, multiple unmet needs were identified across the HSIL care continuum, including limited disease awareness prior to diagnosis; insufficient understanding of treatment options and restricted decision-making autonomy, apprehension toward surgery and suboptimal tolerability of non-invasive options during treatment; and anxiety during follow-up related to treatment failure or persistent HPV infection.

- Consistent with these findings, quantitative survey results showed that 78% of patients reported limited disease awareness prior to diagnosis, 59% lacked understanding of the implications of surgical treatment for fertility and pregnancy outcomes (e.g., miscarriage, preterm birth), 44% were unaware of postoperative recurrence risk, and 32% perceived inadequate communication regarding treatment options (**Figure 3**).

Figure 3. Patient-perceived unmet needs in HSIL

Unmet needs	Overall (N=130)	CIN2 (n=70)	CIN3 (n=60)
Limited disease awareness prior to diagnosis	102 (78%)	58 (83%)	44 (73%)
Unawareness of surgical impact on fertility	77 (59%)	45 (64%)	32 (53%)
Unawareness of post-surgical recurrence risk	57 (44%)	29 (41%)	28 (47%)
Lack of physician explanation of treatment options	42 (32%)	26 (37%)	16 (27%)

### Patient treatment preferences

- Although surgical efficacy was acknowledged, concerns regarding fertility preservation (87%) and dissatisfaction with postoperative discomfort (86%) were highly prevalent (**Figure 4**).
- Overall, 81% of patients preferred non-invasive therapy as first-line treatment, and 65% expressed fear of surgery-related adverse health outcomes

Figure 4. Perceptions of surgical approaches by patients

Unmet needs	Overall (N=130)	CIN2 (n=70)	CIN3 (n=60)
Concerns about efficacy	47 (55%)	21 (53%)	26 (58%)
Concerns about safety	53 (62%)	21 (53%)	32 (71%)
Concerns about surgical impact on fertility	74 (87%)	31 (78%)	43 (96%)
Dissatisfaction with postoperative discomfort	73 (86%)	35 (88%)	38 (84%)

## CONCLUSIONS

- HSIL management in China shows critical gaps in limited disease awareness, non-standardized care and overtreatment, and a lack of non-invasive options.
- Both physicians and patients emphasize concerns about the impact of surgical interventions on fertility, highlighting an urgent need for non-invasive, fertility-preserving treatment options that ensure safety, efficacy, and quality of life.

#### Abbreviation:

HSIL, High-grade squamous intraepithelial lesion; CIN2, Cervical intraepithelial neoplasia grade 2; CIN3, Cervical intraepithelial neoplasia grade 3; LEEP, Loop electrosurgical excision procedure; CKC, Cold knife conization; HPV, Human papillomavirus

#### Disclosure:

WC, JM, XQQ, XFB, and HYW are current employees of IQVIA, which received funding from Yahong for this study. The authors declare no conflicts of interest related to this study.