

**Table S1** Participant recruitment criteria

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Inclusion criteria

Women

Had visited the Department of Gynecology of Shanghai Ruijin Hospital between 1st November 2021 and 28th February 2022

Had undergone HPV test, TCT and DNA ploidy test during this period

Had undergone colposcopy or cervical biopsy during this period

Over 18 years old when screening test had been conducted during this period

Exclusion criteria

TCT results were reported using Papanicolaou's system

Diagnosed as intrauterine adhesions

Had cervical cancer history

Incomplete colposcopy information

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HPV, human papillomavirus; TCT, ThinPrep cytology test.

**Table S2** Definition of variables

Variable	Assessment way (definition)	Source
Age	The age at the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
Smoking	Smoking history obtained till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
Menopause	Menopause status at the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
No. of pregnancies	Number of pregnancies till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
Mode of abortion	Mode of abortion had ever encountered till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
No. of induced abortions	Number of induced abortions had ever conducted till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
No. of birth	Number of births had ever given till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
Mode of delivery	Mode of delivery had ever had till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
History of LEEP	Whether had ever conducted LEEP till the first visiting during 1st November 2021 to 28th February 2022	Homepage of the case
Type of HPV	The all types of HPV tested using multiplex polymerase chain reaction and capillary electrophoresis to detect 25 different HPV types during 1st November 2021 to 28th February 2022	Laboratory information system
DNA ploidy	DNA ploidy result using DNA image cytometry during 1st November 2021 to 28th February 2022	Laboratory information system
Thinprep cytology test (TCT)	Degree of malignancy using TCT during 1st November 2021 to 28th February 2022	Laboratory information system
Transformation zone of SCJ	Transformation zone of squamocolumnar junction observed using colposcope during 1st November 2021 to 28th February 2022	Laboratory information system
Pathologically confirmed worst lesion	The worst lesion confirmed by cervical biopsy during 1st November 2021 to 28th February 2022	Laboratory information system

HPV, human papillomavirus; LEEP, loop electrosurgical excision procedure; SCJ, squamocolumnar junction.