

## Analysis of screening results for upper gastrointestinal cancer and precancerous lesions in high-risk population aged 40–69 in Chaoshan area, Guangdong Province, China

Qing mei Yang<sup>1</sup>, Yiwei Xu<sup>2</sup>, Xinjia Wang<sup>3</sup>

<sup>1</sup>School of Public Health, Shantou University, Shantou 515063, China

<sup>2</sup>Department of Clinical Laboratory Medicine, the Cancer Hospital of Shantou University Medical College, Shantou 515041, China

<sup>3</sup>Department of Orthopedics, the Cancer Hospital of Shantou University Medical College, Shantou 515041, China

### INTRODUCTION & AIM

**Background:** China bears nearly half of the global burden of upper gastrointestinal cancers, but screening coverage in South China is low and data are limited. As the only national prospective cohort site for esophageal cancer in South China, the epidemiological characteristics of the disease in the Chaoshan region remain unclear.

**Objective:** The objective was to investigate the detection and distribution characteristics of cancer and precancerous lesions in a high-risk population of patients with upper gastrointestinal cancer in the Chaoshan area.

### METHOD

**Methods:** A cross-sectional survey design was used to include a total of 3,233 high-risk groups of upper gastrointestinal cancer patients aged 40–69 years in Chaoshan from 2019 to 2025. Participants underwent gastroscopy, and suspected lesions were biopsied for pathological examination.

### RESULTS & DISCUSSION

**Results:** The detection rate of upper gastrointestinal cancers and precancerous lesions was 12.62% (408/3,233), including 44 cases of Barrett's esophagus (1.36%), 287 cases of low-grade intraepithelial neoplasia (8.88%), 33 cases of high-grade intraepithelial neoplasia (1.02%), 6 cases of early cancer (0.19%), and 38 cases of advanced cancer (1.18%). The positive detection rate was 2.38% (77/3,233), the cancer detection rate was 1.36% (44/3,233), and the early diagnosis rate was 50.65% (39/77).

Gender distribution showed that the detection rate of cancers and precancerous lesions was significantly higher in males than in females (15.90% vs. 9.98%,  $P < 0.001$ ). Age distribution showed that the detection rate of low-grade intraepithelial neoplasia followed an inverted 'U'-shaped curve, peaking in the 50–54 age group.

**Discussion:** As the Chaoshan area is a region where UGC screening started relatively late, being able to achieve a 2.38% positive detection rate and an early diagnosis rate of over 50% in a short period suggests that the burden of UGC disease in the area cannot be ignored, and the screening work has begun to show initial results.

**Distribution of various types of lesions by gender:** the detection rate of low-grade intraepithelial neoplasia was higher in men than in women (10.83% vs. 7.31%), the detection rate of advanced cancer was higher in men than in women (2.22% vs. 0.33%), and the overall detection rate of UGC and precancerous lesions was higher in men than in women (15.90% vs. 9.98%). All of the above differences were statistically significant ( $P < 0.001$ ). See Table 1.

Table 1 Comparison of Detection Rates of Upper Digestive Tract Lesions by Gender and Level in Chaoshan Area, Guangdong Province from 2019 to 2025

Lesions at various levels of the upper digestive tract	Male (n=1440)	Female (n=1793)	$\chi^2$	P
Barrett's Esophagus	20 (1.39)	24 (1.34)	0.015	0.902
Low-grade intraepithelial neoplasia	156 (10.83)	131 (7.31)	12.282	<0.001
High-grade intraepithelial neoplasia	17 (1.18)	16 (0.89)	0.657	0.418
Early cancer	4 (0.28)	2 (0.11)	0.463	0.496
Advanced cancer	32 (2.22)	6 (0.33)	24.497	<0.001
Total	229 (15.90)	179 (9.98)	25.377	<0.001

Note: The data outside parentheses represents the number of people, while the data inside parentheses represents the detection rate (%)

\* $1 \leq T < 5$  and  $n \geq 40$ , use continuity correction chi square test

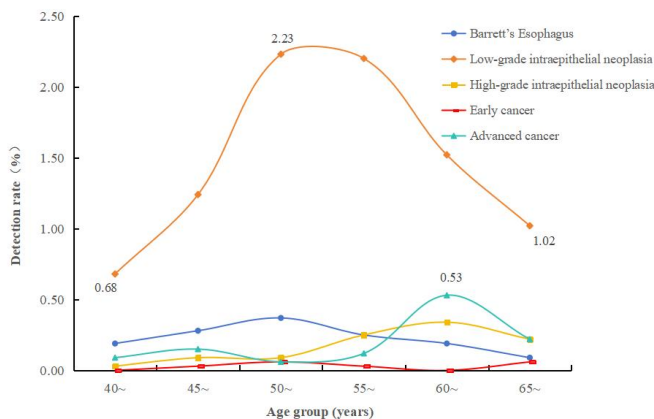


Figure 1 Distribution of Age Groups by Detection Rates of Upper Gastrointestinal Cancer and Precancerous Lesions in High-Risk Populations in Chaoshan Region, Guangdong Province (2019-2025)

### CONCLUSIONS

**Conclusion:** The detection rate of upper gastrointestinal tract cancer and precancerous lesions in high-risk groups in the Chaoshan area is high, and men should be the primary focus of prevention and control efforts. Low-grade intraepithelial neoplasia showed specific age distribution characteristics, which provided a reference for optimizing the key age of screening and formulating precise public health prevention and control strategies.

### Keywords

**Keywords:** Upper gastrointestinal cancer; Precancerous lesions; Detection rate; Chaoshan region

### FUTURE WORK/ REFERENCES/ACKNOWLEDGMENT

**Future work:** Continuing to promote upper gastrointestinal cancer screening in the Chaoshan region and conducting research on its related risk factors is expected to further reduce the incidence of upper gastrointestinal cancer in the area.

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