Participation and yield of colonoscopy for colorectal cancer screening in urban China

Hongda Chen1, Ni Li1, Jiansong Ren1, Yueming Zhang1, Zhaoxu Zheng1, Shuangmei Zou2, Kai Zhang1, Min Dai1*, Jie He1

1. National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China

The conclusion
The participation rate of screening colonoscopy is low in a population-based screening program in urban China. The adenoma detection rates were satisfactory among participants who undertook screening colonoscopy. Further efforts on the improvement of the participants’ adherence to screening colonoscopy need to be advocated in the next-step researches.

Introduction
Screening for colorectal cancer (CRC) is effective in reducing the burden of this disease, and colonoscopy is the gold standard for CRC screening. Current evidence on the acceptance and effectiveness of screening colonoscopy in China is still sparse. We aimed to assess the participation and diagnostic yield of screening colonoscopy in a population-based CRC screening program in China.

Methods
This study was conducted under the framework of Cancer Screening Program in Urban China supported by the central government of China. Urban permanent residents of age 40 to 69 years old were defined as the eligible population for the cancer screening program. Eligible participants were invited to undertake epidemiological questionnaire survey for assessment of cancer risk based on Harvard Cancer Risk Index, and those who were assessed to be at high risk of colorectal cancer were recommended to take screening colonoscopies. Detailed questionnaires, colonoscopy and pathology reports were collected. Research data for 2012–15 of this program were used for this analysis. Multivariate logistic regression models were used to identify potential risk factors associated with the adenoma detection through colonoscopy.

Results
1. Participation rate of the screening colonoscopy
182,927 eligible participants were evaluated to be high-risk of CRC, and 25,593 of them (14.0%) took screening colonoscopy (Figure 1). Participation rates were similar for male and female (13.9% and 14.1%, respectively).

2. Factors associated with the participation rate
Age, ethnicity, education background, previous history of fecal occult blood test, history of smoking, inflammatory bowel disease, family history of CRC and history of colonic polyps were identified to be associated with the participation rate of screening colonoscopy (Table 1).

3. Diagnostic yield of the screening colonoscopy
The overall detection rates for advanced neoplasia and any adenoma were 3.34% and 11.51%, respectively. Male, age and family history of CRC were associated with the detection of adenoma in the colonoscopy, with OR (95% CI) of 2.12 (2.00-2.26), 1.05 (1.04-1.05) and 1.18 (1.10-1.26), respectively.

Table 1. Factors associated with the participation rates of screening colonoscopy

![Figure 1. Flow diagram of the study population](image)

![Figure 2. Distribution of the colonoscopy findings](image)

Contact Information
Corresponding Author: Prof. Min Dai. Email: daimin200@21omail.com
First author: Dr. Hongda Chen. Email:hongda.chen@cicams.ac.cn