



The Jockey Club
 School of Public Health and Primary Care
 15th Anniversary

International
 Conference on
 Innovations in
 Public Health Sciences
 公共衛生科學國際會議
 創意與開拓

23-25 September 2016
 School of Public Health Building | Hong Kong

Supporting Organizations:

Golden Jubilee Charity Foundation

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Oral Presentation – Session E: Cancer Screening

Tailoring choice between colonoscopy vs. sigmoidoscopy for population-based colorectal cancer screening in Chinese: a prospective colonoscopy study

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Key words: colorectal cancer screening, sigmoidoscopy, colonoscopy, advanced colorectal neoplasia, advanced proximal neoplasia

Background The increasing trend in both the incidence and mortality of colorectal cancer (CRC) in China highlights the pressing need for population-based screening. Flexible sigmoidoscopy (FS) is becoming more popular as a primary screening tool and in many regions of China, colonoscopy capacity is limited. Tailoring endoscopic screening based on the risk of advanced proximal neoplasia (APN) is necessary, especially in resource-deprived regions. Since old age and male gender are two important risk factors for CRC, we tested the hypothesis that the risk of APN was significantly lower in younger female Chinese subjects as compared to older male subjects.

Methods We recruited 5,833 CRC screening participants aged 50 to 75 between 2013 and 2015 in a large hospital-based endoscopy unit in Shanghai, China. Those with poor bowel preparation and whose colonoscopy failed caecal intubation were excluded. All polyps were removed as deemed appropriate and examined by histopathologists who were blinded to the patients' particulars. χ^2 test was used to compare the prevalence of advanced proximal neoplasia (APN) among different age and gender groups. The respective numbers needed to be screened (NNS) were evaluated.

Findings The prevalence of APN in individuals aged 50-55, 56-60, 61-65 and ≥ 66 was 4.2%, 7.6%, 9.3% and 10.6% in male and 0.4%, 0.9%, 0.8% and 4.8% in female, respectively ($p < 0.001$). The NNS by colonoscopy to detect one APN was 124 (95% C.I. 80, 270) and 96 (95% C.I. 57, 130) in female aged 50-60 and 61-65 years, respectively, when compared with the significantly low NNS (range 18-38) in other age/gender subgroups ($p < 0.001$).

Interpretation These findings supported the application of sigmoidoscopy for CRC screening among female individuals younger than 65 years, given their low risk of APN and large NNS. Colonoscopy could be more preferred for Chinese individuals aged ≥ 65 years old. The study is limited by its generalizability to average-risk subjects. The feasibility and cost-effectiveness of this simple, tailored screening strategy in different Chinese populations should be further examined.

Funding None.

Contributors PC, XY, YW conducted subject recruitment and performed the colonoscopies. JLH, HW and MCW designed and conceived the study. JLH performed the statistical analysis. JLH wrote the abstract with input from MCW. All authors have seen and approved the final version of the Abstract for publication.