

## Optimizing Bowel Preparation Schedule Can Improve the Bowel Cleansing Effect and Adenoma Detection Rate at Colonoscopy

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### Optimizing Bowel Preparation Schedule

Colonoscopy is widely used for colorectal cancer screening, but up to 9% of colorectal cancers are interval cancer and most of them are attributed to missed lesions [1]. Because the risk of interval cancer is reversely associated with adenoma detection rate (ADR), improvement of ADR is important in order to achieve its protective effect. There are many ways to improve ADR, such as longer withdrawal time, education of endoscopist, upgrade of the equipment, etc. Our recent study demonstrated that by merely changing the schedule of bowel preparation can effectively increase the colonic ADR in a health management center [2].

Many studies have approved that split-dose bowel preparation schedule not only is more tolerable, but also has better colonic cleansing effect, especially the right side colon [3]. The key-point is the timing of the second dose of cleansing agent that a shorter preparation-to-colonoscopy interval yield better bowel cleansing quality [4]. The recent guideline from American society of gastrointestinal endoscopy (ASGE) recommend the second dose of bowel cleansing agent should be taken within 3 to 8 hours before colonoscopy, and European society of gastrointestinal endoscopy (ESGE) advise the interval should be no longer than 4 hours [5,6]. The high quality of bowel preparation could be a cornerstone to improved ADR. The final goal of screening or surveillance colonoscopy is to reduce the disease burden and mortality rate of colorectal cancer [7,8]. To decrease of ADR could be a short-term goal because each 1% increase in ADR is associated with 3% decreased in risks of interval cancer and 5% decrease in cancer mortality [9]. Our study shows the modification of preparation schedule not only get a greatly better cleansing quality but also improve the ADR [2]. It indicates that improvement of colonoscopy quality can be achieved by simply optimizing the schedule of bowel preparation.

In the patients with morning appointment, the second dose of the cleansing agent are usually administrated between 5 AM and 7 AM [3]. Considering that the duration of cleansing agent and participants needed to arrive at hospital before 8 AM, our study set the time of the second dose at 4 AM. One may suggest it is too early to have adequate compliance. Nevertheless, more than 85% of participants could comply with the time schedule [2]. Unger et al also show the patient express willing to awaken at 2 to 3 AM to complete the regimen when educated on the advantage of the schedule on cleansing effect [10].

In summary, ADR is a crucial indicator on high quality colonoscopy to achieve the protective effect on screening colonoscopy. Optimizing the schedule of bowel preparation to shorter the time interval between preparation and colonoscopy is feasible and effective to accomplish a better bowel preparation and higher ADR.

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