# Adenoma and Sessile Serrated Detection Rates in Patients Undergoing Screening Colonoscopy are Higher in those Prepped with High-Volume Colon Irrigation than with Standard Oral Bowel Preparations

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## Abstract:

Adenoma detection rate (ADR) is defined as the percentage of screening population, with an average risk for colorectal cancer (CRC) who have adenomas detected on initial screening colonoscopy. Sessile serrated polyps (SSPs) are considered to be a disproportionate contributor to interval CRC (subsequent to a colonoscopy). Quality of colonoscopy is critically dependent on the adequacy of colon preparation. This study evaluated the adequacy of using high-volume colon irrigation bowel prep (BP) on the detection rates of neoplastic polyps at the index screening exam. ADR and detection rates of SSPs were collected at Austin Gastroenterology (Austin, TX) between October 1, 2018 and June 31, 2019. Study participants included 112 eligible and average risk patients. The high-volume colon irrigation was performed using an FDA-cleared system and under stringent standard operating procedures (SOP) by nurses and technicians trained by the managing operator. The study participants were examined by 18 gastroenterologists. ADRs of patients undergoing high-volume colon irrigation BP was 34% in females and 60% in males. The detection rate for SSPs in patients who underwent high-volume colon irrigation BP was 12.5%. These results significantly exceed the national guidelines for oral prep, for both ADR and SSP detection rates. Detection rate of colon lesions is inversely related to the patient's post-colonoscopy CRC risk, and improvement in methods and techniques to increase their detection rate will improve patient care. Due to the increased quality of detection of neoplastic polyps, high-volume colon irrigation BP approach should be considered a prep of choice for improved quality and outcomes.

## Introduction:

- ADR is defined as the percentage of patients age 50 and older, with an average risk for CRC who have adenomas detected on initial screening colonoscopy. It is also an indicator of the adequacy of colon preparation and skill level of the colonoscopist. Conventional adenomas have historically been considered to be the only screening-relevant CRC precursor lesion.
- Sessile serrated polyps (SSPs) are considered to be a disproportionate contributor to interval CRC.
- The high-volume colon irrigation BP referred to in this study is an FDA cleared system operated under stringent standard operating procedures (SOP) by nurses and technicians to prepare patients for colonoscopies, in replacement of the traditional oral prep.
- Quality of colonoscopy is critically dependent on the adequacy of colon preparation.

## Methods:

- ADR and detection rates of SSPs were collected at Austin Gastroenterology (Austin, TX) between October 1, 2018 and June 31, 2019.
- Study participants included 112 eligible and average risk patients. Inclusion criteria: patients must be asymptomatic, 50 years or older, or over 45 and African American, and must be undergoing their initial screening colonoscopy.
- All patients underwent high-volume colon irrigation BP using the FDA-cleared system.
- The study participants were examined by 18 gastroenterologists.
- This analysis was performed retrospectively on a de-identified dataset.

## Results:

- ADRs of patients undergoing high-volume colon irrigation BP was 34% in females and 60% in males (Table 1).
- The detection rate for SSPs in patients who underwent high-volume colon irrigation BP was 12.5%.
- All procedures were recorded at 99% adequacy for the studied BP (111 of 112 patients), with an average Boston Bowel Preparation Score (BBPS) of 8.3±1.3.

## Discussion

- When using a high-volume colon irrigation BP preformed under stringent standard operating procedures both the ADR and SSP significantly exceeded the national guidelines for oral prep [1,2].
- Detection rate of colon lesions is inversely related to the patient's post-colonoscopy CRC risk, and improvement in methods and techniques to increase their detection rate will improve patient care.
- The FDA cleared high-volume colon irrigation, has outstanding BBPS scores, ADR, and SSP detection rates.
- Due to the increased quality of detection of neoplastic polyps, this approach should be considered a prep of choice for improved quality and clinical outcomes.

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**Figure 1** -The FDA cleared high-volume colon irrigation bowel prep (BP) system

**Table 1** - Adenoma detection rates (ADR) and detection rates of sessile serrated polyps (SSP) following traditional oral prep [1,2] or high-volume colon irrigation bowel preparation (BP) procedure.

| | ADR average | ADR male | ADR female | SSP detection rate |
|---|---|---|---|---|
| High-volume colon irrigation BP | 46% | 60% | 34% | 12.5% |
| Traditional Oral prep | 25% | 30% | 20% | 5-7% |

**Reference** 1. Rex et al., 2017, Colorectal Cancer Screening: Recommendations for Physicians and Patients from the U.S. Multi-Society Task Force on Colorectal Cancer, *The American College of Gastroenterology*, 2. Kahi et al., 2019, Screening Relevance of Sessile Serrated Polyps, *Clinical Endoscopy*

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