Rates of cancer and advanced histology in small and diminutive polyps from a high-risk population (Newfoundland and Labrador)

Dr. Tom Farrell MSC MD, Hunter Rixmann, Rosemary Stanoev, Dr. Jerry Mcgrath MD FRCPC, Dr. Chris Smith MD MSC FRCSC

Background

- Small (6 – 9 mm) and diminutive (1– 5 mm) polyps have relatively low rates of advanced histology and cancer, leading to suggestions that with appropriate endoscopic characterization, these polyps can be resected and discarded.
- Newfoundland and Labrador (NL) has the highest incidence of colorectal cancer (CRC) and highest mortality rates of CRC in Canada.
- Current guidelines recommend patients with 1 – 2 small/diminutive polyps, without advanced histology, should return to fecal immunochemical testing (FIT) rather than undergo future colonoscopy.
- This subset of patients may make excellent candidates for resect and discard approaches.
- **Our question: would a resect and discard approach be reasonable in the NL population, based on rates of advanced histology and cancer in small and diminutive polyps?**

Methods

- We performed a retrospective chart review of patients in NL undergoing colonoscopies for positive FIT during the year April 1, 2022 – March 31, 2023. Specifically, we selected patients who had 1 – 2 specimens <10 mm removed. We excluded patients with high-risk personal or family histories.
- Pathology reports were used to determine polyp types and rates of advanced histology (high-grade dysplasia, villous components, sessile serrated lesions with dysplasia) and cancer.
- We then compared a resect and discard approach with histopathological analysis, to determine concordance of surveillance recommendations amongst our study population.

Results

- 366 patients with 491 total specimens met our inclusion criteria. Average age was 62.6, with 48.1% (n=176) females and 51.9% (n=190) males. 430 of the specimens were found to be polypoid, while 61 were non-polypoid.
- Of the 430 polyps, 65.6% (n=282) were diminutive and 34.4% (n=148) were small. The distribution of polyps, and rates of advanced histology/cancer can be seen in Table 1.

Table 1. Distribution of polyps by type.

Polyp type	Total number	Diminutive (%)	Diminutive with advanced histology/cancer (%)	Small (%)	Small with advanced histology/ cancer (%)
All	430	282 (65.6%)	1 (0.4%)	148 (34.4%)	3 (2.0%)
Conventional adenomas	292	184 (63.0%)	1 (0.5%)	108 (37.0%)	3 (2.8%)
Sessile serrated lesions	15	7 (46.7%)	-	8 (53.3%)	-
Hyperplastic polyps	113	84 (74.3%)	-	29 (25.7%)	-
Inflammatory polyps	10	7 (70%)	-	3 (30%)	-

- Of all polyps, only 0.9% (n=4) were advanced or contained cancer, including 2.0% (n=3) of small, and 0.4% (n=1) of diminutive polyps. No high grade dysplasia was seen in any of our specimens.
- Sessile serrated lesions made up 3.5% (n=15) of all polyps. Though not considered advanced, they require endoscopic follow-up based on current guidelines.
- In total, histology requiring future endoscopic surveillance was found in 4.4% (n=19) of all polyps and affected 4.6% (n=17) of all patients. A breakdown of advanced polyps/cancer can be seen in Table 2.

Table 2. Advanced histology amongst polyps in our study population.

Advanced histology	Diminutive (% of all diminutive)	Small (% of all small)	Patients affected (%)
Tubular adenomas with high-grade dysplasia	-	-	-
Tubular adenomas with villous components	1 (0.4%)	2 (1.4%)	3 (0.8%)
Tubular adenomas with cancer	-	1 (0.7%)	1 (0.3%)
Sessile serrated lesions with dyplasia	-	-	-
Sessile serrated lesions without dysplasia*	7 (2.5%)	8 (5.4%)	13 (3.6%)

*Sessile serrated lesions without dysplasia are not considered advanced, but do require future endoscopic surveillance.

Discussion

- Our results fit with currently published data on rates of advanced histology in small and diminutive polyps. For example, in a study of over 37 thousand small and diminutive polyps, 1.7% had advanced histology (Punogoti et al. 2017).
- If a resect and discard approach had been taken with the patients in our study, the concordance rate between our follow-up recommendations and those suggested by histopathological analysis would have been 95.4%. This is well above the 90% threshold suggested by the American Society for Gastrointestinal Endoscopy for polyps <5 mm in size (Rex et al. 2011).
- In summary, NL patients with 1 – 2 small/diminutive polyps could be considered for resect and discard approaches, despite the province's higher incidence of CRC.

References

Punogoti et al. 2017. Risk of cancer in small and diminutive colorectal polyps. Digestive Endoscopy. 49 (1): 34-37.

Rex et al. 2011. The American Society for Gastrointestinal Endoscopy PIVI (Preservation and Incorporation of Valubale Endoscopic Innovations) on real-time endoscopic assessment of the histology of diminutive colorectal polyps. Gastrointestinal Endoscopy. 73 (3): 419-422.