

Diminutive polyps and high risk status

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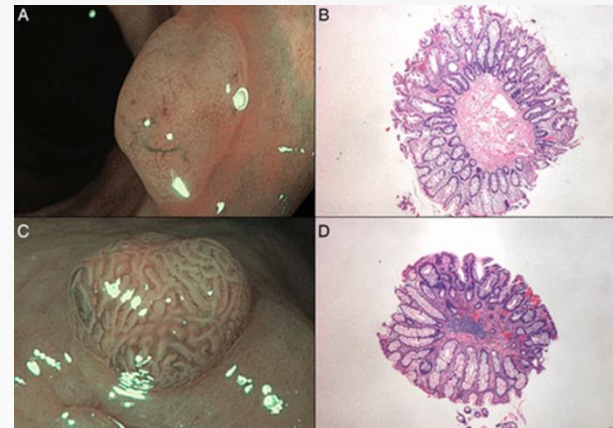
Disclosures

- Nothing to disclose



Background

- Optical diagnosis can replace histopathology for diminutive (1-5mm) polyps



- However, advanced histological features as villosity, high-grade dysplasia (HGD) and CRC can not be assessed
- Interferes with risk-stratification for determining interval surveillance colonoscopy

¹Hassan et al. CGH 2010

²Kessler et al. Endoscopy 2011

³Vleugels et al. EIO 2017

Background

- Previous modeling studies have shown optical diagnosis to be cost-effective¹⁻³
- However, based on assumptions for risk-stratification by diminutive polyps

¹Hassan et al. CGH 2010

²Kessler et al. Endoscopy 2011

³Vleugels et al. EIO 2017



Research questions IEE workgroup

1. What is the proportion of diminutive polyps with advanced histological features?
2. What is the proportion of patients that is categorized as high-risk due to diminutive polyps?
3. What are the findings at first surveillance colonoscopy of high-risk patients due to diminutive polyps?
4. Are there differences for these estimates between colonoscopy screening & surveillance and FOBT-screening?



Definitions

- Low-risk patients:
 - 1-2 diminutive or small non-advanced adenomas
- High-risk patients:
 - Adenomatous polyp with advanced histology (i.e. $\geq 25\%$ villous component, HGD or CRC)
 - ≥ 3 diminutive or small non-advanced adenomas
 - Adenomatous or sessile serrated lesion $\geq 10\text{mm}$



Outcomes

1. Proportion of diminutive polyps with advanced histological features
2. Proportion of patients that is high-risk due to diminutive polyps
3. Proportion of high-risk outcomes of first surveillance colonoscopy of low- and high-risk patients



Methods

- International, multicenter cohort study
- Project-leaders of prospective databases (at least 1,000 participants) were contacted:
 - Colonoscopy screening & surveillance
 - FOBT-positive screening



Methods

- Pre-designed datasheet:
 - Cohort characteristics (origin, quality parameters, GI pathologist involved)
 - Patient characteristics (number, age, sex)
 - Polyp characteristics (number, histology, CRC)
 - Outcomes of first surveillance colonoscopy (normal, low-risk, high-risk or CRC)
- Outcomes:
 - Reported as medians (range)



Database characteristics

- 6 colonoscopy screening/surveillance databases (4 US and 2 Europe)
- 4 FOBT colonoscopy databases (4 Europe)

	Colonoscopy screening/surveillance	FOBT colonoscopy screening
Cohort size, n	1647 (1100-12226)	3903 (2817-19976)
Mean age in years	61 (56-63)	62 (60-65)
Male gender (%)	58 (51-72)	53 (48-57)



Question 1. Proportion of diminutive polyps with advanced histology?

	Colonoscopy screening/surveillance	FOBT colonoscopy screening
Diminutive polyps, n	2379 (1311-8708)	3718 (1227-7283)
CRC (%)	0% (0-0.04)	0.06% (0-0.29)
Advanced histology (%)	1.4% (0.5-2.8)	6.0% (2.5-18.9)



Question 2. Proportion of high-risk patients due to diminutive polyp?

	Colonoscopy screening/surveillance	FOBT colonoscopy screening
High risk patients (%)	20.9% (7.0-49.7)	35.0% (29.9-38.7)
High risk due to diminutive polyps (%)	34.1% (27.3-38.7)	10.7% (7.8-14.0)
Advanced histology (%)	5.7% (1.3-9.7)	4.8% (1.4-10.4)
Multiplicity (%)	29.7% (21.0-36.6)	5.8% (3.6-6.7)



Question 3. High-risk findings at surveillance colonoscopy of low- and high-risk patients?

	Outcome surveillance colonoscopy	
Index risk status	Colonoscopy screening/surveillance	FOBT colonoscopy screening
Low-risk	14.1% (13.1-21.0)	12.8% (7.8-17.8)
High risk		
Advanced histology (%)	16.0% (8.0-29.7)	11.7% (4.6-18.8)
Multiplicity (%)	26.9% (25.0-35.3)	15.4% (6.7-24.0)
Other high-risk (%)	29.5% (19.4-38.0)	17.4% (13.8-20.9)



Conclusion

- Advanced histology in diminutive polyps is common in FIT-positive, but rare in colonoscopy screening and surveillance
- The proportion of patients defined as high-risk due to diminutive polyps is rare in FIT-positive, but common in colonoscopy screening and surveillance
- Amongst patients that are high-risk due to advanced histology within diminutive polyps, the risk of future advanced neoplasia seems equal to low-risk patients



Strengths

- Prospective databases including current quality indicators
- Majority of samples assessed by GI pathologists
- Comparison colonoscopy screening & surveillance and FIT-positive



Limitations

- Variability between endoscopists in endoscopic sizing of polyps¹
- Variability between pathologists in grading advanced histology²
- Possibility of selection bias for outcomes of surveillance colonoscopy³

¹de Vries et al. Eur J of Radiol 2011.

²Fukunaga et al. 2014. Am J Surg Path 2005.

³van Heijningen et al. Gut 2015.



Thank IEE working group

Thank you for your attention



