Title: Narrow-band imaging does not improve detection of colorectal polyps when compared to conventional colonoscopy: a randomized controlled trial and meta-analysis of published studies.

Version: 3 Date: 16 August 2010

Reviewer: Mainor R Antillon

Reviewer’s report:

In their introduction the authors state ..."removal of polyps and postpolypectomy surveillance decreases the overall mortality from colorectal cancer. I am not sure this is a true statement. Did they mean to say some studies have shown it decreases the incidence of colorectal cancer. Is there data to support the statement "polypectomy decreases overall mortality form colorectal cancer"?

The authors only reported % of excellent bowel preps but would be more interesting to report Number or Excellent and Good bowel preps like other studies have.

Adenoma detection rate was low in this study compared to some of the adenoma detection rate in their meta-analysis of published studies. Not to mention they state in the limitations of this study "As screening colonoscopy is not usually recommended in our country in people above 50 years of age with average risk", then one would assume that an average age of 57.36 years old for the NBI group and 59.29 years old for the White-light group prevalence of adenomas should be higher than if all of these patient's had their polyps removed during a prior colonoscopy. Yet if you look at their reported date 35% in NBI group and 36% in the White-light group had at least one colonoscopy in the preceding 10 years and 31% in both groups in the preceding 5-years. These are high number if colonoscopy is not usually recommended in their country.

It is not clear how during the 9 month enrollment period amongst “three experienced examiner” that they were only able to enroll 482 patient and it is not clear how only 501 patient during the 9 months were assessed for eligibility (that's a volume of about 167 pts/"experienced examiner" in a 9 month period or 223 pts/"experienced examiner a year.... a very low volume ..."all consecutive adults patients presenting for screening or diagnostic colonoscopy during a 9 month period or were their a selection bias for eligibility other than their stated exclusion criteria?

Several studies have shown when it comes to adenoma detection rate, experience alone doesn’t correlate with "high quality screening colonoscopy - high adenoma detection rate". Adenoma detection rate is currently the best accepted indicator of the quality screening colonoscopy, yet their data may suggest otherwise.
Looking at Sabbagh et al.'s 35% of NBI group and 36% of the White-light group had a colonoscopy within the preceding 10 years - yet the percent of those colonoscopy with previous polyp resection in the NBI group was only 11% (unknown what percent were adenomas) while the White-light group was only 8% (unknown what percentage were adenomas). One must assume that the adenoma detection rate was even lower than this low number of polyp detection rate, which bringing up the question of the quality of colonoscopy performed. Unknown what percent of the patient in both group who's previous colonoscopy were performed by any of the three physician in this study.

The authors report total examination time of 9.21 minutes in NBI group and 9.22 minutes in White-light group. Is this Withdrawal time or is this the insertion time plus withdrawal time (total procedure time)? If this is total procedure time with polypectomy time included then one would have to assume that their average withdrawal time in a no polyp find colonoscopy was less than the 6-minute minimum suggested as the acceptable low end average withdrawal time for high quality colonoscopy.

They state in their sample size determination section of their paper that from institutional data, that the mean number of polyps per patient in the control group would be 0.32 (what they could have and should have calculated as well was their adenoma detection rate from their institutional data to indicate the quality of colonoscopy done by the three examiners of this study).

In their results they report total number or adenomas of 48 in NBI group and of 58 in the White-light... but not adenoma rate of per patient screened - which is likely to be much lower. The assumed low adenoma detection rate is possibly a result of their short withdrawal time.

They don't do statistical analysis on total adenoma detection between the NBI group and White-light group? Their data shows that the White-light group had 20.8% higher detection rate than did the NBI group; this is likely a result of the relative withdrawal time bias due to better mucosal visualization due to more light during the withdrawal phase of the white-light group compared to that of the NBI group. This is supported by their finding of statistically significantly greater total number of polyps found in the White-light group compared to the NBI group with no statistically significant difference with NBI group or White-light group examination time.

Any one who has used NBI during colonoscopy to evaluate polyp pit patterns knows how little distance one can seen while in NBI mode and to evaluate the entire colonoscopic mucosa certainly the withdrawal phase of colonoscopy procedure would have to be substantially longer than White-light colonoscopy to visual adequately the colonic mucosa. Looking at the authors data: Total examination time in minutes for the NBI group was 9.21 minutes and 9.22 minutes for the White-light group.

**Level of interest:** An article whose findings are important to those with closely
related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I am a consultant for Olympus America