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COMPARISON OF CARBON DIOXIDE (CO₂) TO AIR INSUFFLATION IN COLONOSCOPY

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Introduction It is well known that CO₂ insufflation reduces pain during and after colonoscopy. However air insufflation is more popular probably due to limited randomised studies.¹ This study compares the effects of air and CO₂ insufflation on pain during and after colonoscopy.

Methods The study was conducted over a 3-month period and 126 patients were randomly assigned into CO₂ or air insufflation groups. Discomfort scores during and after colonoscopy was recorded using the modified gloucester discomfort score and factors influencing outcome such as sex, endoscopist grade, previous surgery and sedation were also considered.

Results Of 126 in the study, air was used in 36 and CO₂ in 90. The caecal intubation rate in CO₂ was 95% versus 91% in the air group. Patients in the CO₂ group had lower pain scores during the procedure compared to air. During the procedure, 51.6% CO₂ versus 36.11% (Air) had no discomfort at all (score 1). Patients who had a score of 2, 3 were 46% Air versus 40% CO₂. There was a higher pain score (4, 5) noted at 7% versus 2.7% (Air) noted mainly in females (83.3%). Postprocedure discomfort scores were almost equal noted to be 1.19 Air versus 1.06 at 1 h and 1.08 versus 1.00 CO₂ at 2 h. A number of factors were taken into consideration to see whether this influenced discomfort scores. (1) *Sex*: 57 males and 69 females were in the study. Females had higher pain scores 31.34% versus 15.52% (males). However this was not statistically significant using the Mann-Whitney test. (2) *Sedation*: Average sedation used, midazolam (M) 1.93 versus 0.67 mg CO₂, Pethidine 9 versus 14 mg CO₂, fentanyl 34 versus 17 mg CO₂. Average top up sedation used was 0.02 versus 0.05 mg CO₂ of M, Pethidine 0.69 versus 0.5 mg CO₂ and fentanyl 2.5 mg top up for CO₂ group versus no top up. (3) *Previous surgery*: Data for only 74 patients was available. Those patients who have had no previous surgery (n=50) appear to have lower discomfort levels, however data points for pelvic surgery were too few to come to a conclusion. (4) *Endoscopist*: Discomfort scores were higher in trainees (n=34) using CO₂ than consultants (n=56). Using Mann-Whitney test this was statistically significant with a CI of 95.1%. There was no difference in scores in air group. In the consultant group, using CO₂ lowered patient discomfort compared to air (p=0.06) that was statistically significant.

Conclusion Though CO₂ insufflation is said to be effective in reducing postprocedural discomfort there was not much difference in both groups however pain was reduced during procedure in the CO₂ group. Caecal intubation rate was slightly higher in the CO₂ group and endoscopist grade, sex and previous surgery influenced outcome.

Competing interests None.

REFERENCES

1. Wong JC, Yau KK, Cheung HY, *et al.* Towards painless colonoscopy: a randomized controlled trial on carbon dioxide-insufflating colonoscopy. *ANZ J Surg* 2008;78:871–4.
2. Bretthauer M, Hoff G, Thiis-Evensen E, *et al.* Carbon dioxide insufflation reduces discomfort due to flexible sigmoidoscopy in colorectal cancer screening. *Scand J Gastroenterol* 2002;37:1103–7.