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 C02 group. Caecal intubation rate was slightly higher in the CO2 group and endoscopist grade, sex and previous surgery influenced outcome.

Competing interests None.

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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.