

:
 S 45 ml (130 cc)
 가 (magnesium citrate)
 7
 가 (8, 9, 11), 가 (250 cc)
 가 8 10 (250
 cc) 2
 6
 (,
 2001 12 2002 3 4
 94 , , , , , , ,
 ,) 10 가 4 (0=excellent,
 가 , 94 1=tolerable, 2=barely tolerable, 3=unacceptable)
 가 46 , 가 48 48.8
 , 20 80 (Table 1).
 47 2
 , 47 (amount of residual stool), (resid-
 ual water), (barium coating), -
 (air bubble status) 4 (0=excel-
 lent, 1=good, 2=fair, 3=poor) 가 .
 , , , , , , 12 0, 1, 1
 , 6 cm 2, 1 cm
 , 2 5 1 3 가 .
 (200 cc) 0,
) (130 cc) 7 45 ml (1,
 3
 (250 cc) 8 10 - 1, 10 2, 10
 5

Table1. Demographics

Sex	Sodium phosphate		Magnesim citrate		Total	
	No.	%	No.	%	No.	%
Male	23	48.9	23	48.9	46	48.9
Female	24	51.1	24	51.1	48	51.1
Total patients	47	100.0	47	100.0	94	100.0

Table 2. Comparison of Mean Scores (± SD) of Side Effect

Side Effect	Sodium phosphate	Magnesium citrate	p-value*
Sleep loss	0.47 ± 0.55	0.38 ± 0.57	0.774
Abdominal fullness or bloating	0.43 ± 0.54	0.43 ± 0.54	0.079
Abdominal clamps or pain	0.11 ± 0.31	0.38 ± 0.57	0.000*
Nausea	0.09 ± 0.45	0.34 ± 0.63	0.000*
Vomiting	0.15 ± 0.55	0.04 ± 0.20	0.012*
Anal irritation	0.94 ± 0.64	0.94 ± 0.84	0.029*
Weakness or faint feeling	0.38 ± 0.68	0.81 ± 1.69	0.103
Chest pain	0.09 ± 0.41	0.15 ± 0.42	0.182
Hunger pain	0.06 ± 0.32	0.23 ± 0.48	0.000*
Chills	0.04 ± 0.20	0.19 ± 0.50	0.000*

* $p < 0.05$ by Mann-Whitney test

3
가
S
4 (0=excellent, 1=good, 2=fair,
3=poor)
가
Mann - Whitney test

(mean score: 0.3)
(mean score: 0.46)
($p=0.079$). ($p<0.001$),
($p<0.001$), ($p<0.001$),
($p=0.012$)

(Table 2).

0.64
 ± 0.85 , 1.32 ± 0.94 ($p<0.001$)
 1.64 ± 0.96 ,
 0.81 ± 0.92 ($p<0.001$)

Table 3. Comparison of mean Scores (\pm SD) of Cleansing Ability

Cleansing parameter	Solin	Magcorol	p-value*
Amount of residual stool	0.64 ± 0.85	1.32 ± 0.94	0.000*
Amount of water	0.95 ± 1.02	0.96 ± 0.98	0.930
Barium coating	1.02 ± 0.74	1.28 ± 0.80	0.154
Air bubble status	1.66 ± 0.96	0.81 ± 0.92	0.000*

* $p < 0.05$ by Mann-Whitney test

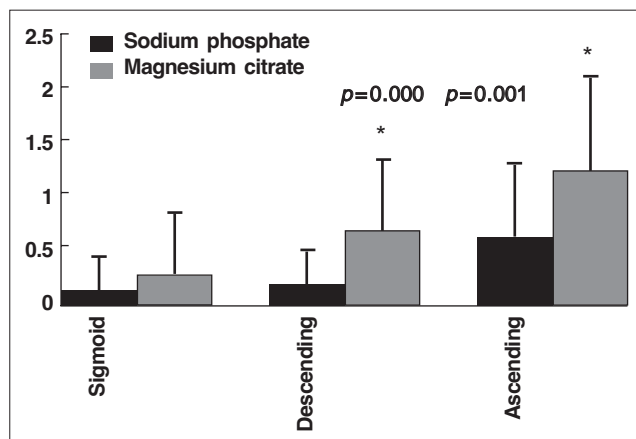


Fig. 1. Graph shows mean scores (\pm SD) of fecal residue. Sodium phosphate is more effective in cleansing the descending and ascending colon than using magnesium citrate. (* $p < 0.05$ By Mann-Whitney test)

(Table 3).

($p=0.001$) ($p<$

S
($p=0.049$)
($p=0.045$)
(Fig. 1).
가
가
가
(Fig. 2).

(6).

가
(5, 12, 13).
1980 Davis (14)
(polyethylene glycol)
(sodium sul -
4 liter
fate)

가
가
가
(5, 11, 15).

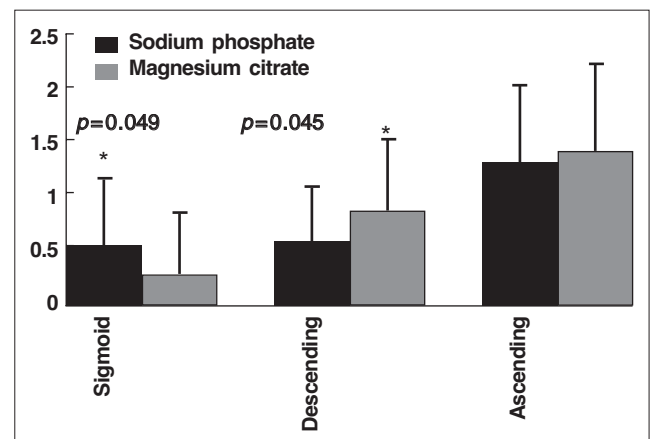


Fig. 2. Graph shows mean score (\pm SD) of barium coating. Sodium phosphate is more effective in barium coating of descending colon than magnesium citrate. But, Magnesium citrate is more effective in barium coating of sigmoid colon than sodium phosphate. (* $p < 0.05$ By Mann-Whitney test)

가 (5, 8). 1990

Vanner (6)

가 가 Marshall (7)

가

Chan (16)

41.1% (3.4%), 47.5% (27.6%)

(17)

(p=0.04)

가 (11), S

(17)

가 (23 11

Simethicone

가 (18).

가 3 - 29% (11, 19 - 21).

가

가

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A Randomized Prospective Trial Comparing Oral Sodium Phosphate with Magnesium citrate in Preparing of Patients for Double Contrast Barium Enema¹

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Purpose: The purpose of this study was to compare two bowel preparation agents, sodium phosphate solution with magnesium citrate solution.

Materials and Methods: A total of 94 subjects that underwent a double-contrast barium enema were included in this study. Bowel preparation before performing the barium study was done by using a sodium phosphate solution in 47 subjects and by using a magnesium citrate solution in the other 47 subjects. We evaluated the presence or absence of side effects when using these bowel preparation agents. Two radiologist who were blinded to the type of bowel preparation evaluated the quality of bowel preparation at the colonic segments (ascending, descending, and sigmoid colon) on the radiographs obtained by double-contrast barium enema, with regard to stool cleansing, water retention, barium coating and bubble formation.

Results: The side effects, such as abdominal clamping pain, nausea, hunger pain and chill occurred more frequently in the sodium phosphate group than in the magnesium citrate group ($p < 0.001$). Stool retention was more frequently found in the magnesium citrate group ($p < 0.001$). However, no statistical difference was noted on the status of water retention and barium coating between two groups. Gas bubble formation was more commonly seen in the sodium phosphate group ($p < 0.001$). The sodium phosphate solution appeared to be more effective in cleansing the right colon ($p = 0.001$).

Conclusion: Sodium phosphate solution appears to be more effective for colonic cleansing, with a lower incidence of side effects, than when using magnesium citrate solution.

Index words : Barium enema examination, technology

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