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# Lymph Node harvesting in Laparoscopic versus Open Colectomy; a Comparative Study

By

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- preservation of normal immune function & diminished acute phase response
- improved short-term results

# ADVANTAGE OF LAPAROSCOPY

# For malignancy, old debate & ancient argument

- Port-site metastasis
- proper oncologic resection and tumour staging
- Tactile sensation

# State of Art

# COLOR STUDY

- *Laparoscopic surgery can be used for safe and radical resection of cancer in the right, left, and sigmoid colon*

Table 1: Short-term and long-term outcomes of large-scale randomized controlled trials for laparoscopic colectomy compared to open colectomy for colon cancer.

| | COST [5, 20, 28] | CLASICC [6, 22, 32] | COLOR [4, 26] | Barcelona [7, 23] | Braga [21, 33] | Milsom [25] | Liang [24] |
|---|---|---|---|---|---|---|---|
| Return of bowel function | | = | ↓ | ↓ | ↓ | ↓ | ↓ |
| Pain score | | | | | | ↓ | ↓ |
| Narcotic use | ↓ | | ↓ | | | ↓ | |
| Length of stay | ↓ | ↓ | ↓ | ↓ | ↓ | = | |
| OR time | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| EBL | | | ↓ | ↓ | ↓ | = | ↓ |
| LN yield | = | = | = | = | = | = | = |
| Circumferential margin + | | = | = | | | | |
| Postoperative morbidity | = | = | = | ↓ | ↓ | = | = |
| Postoperative mortality | = | = | = | = | ↓ | = | |
| Quality of life | = | = | | | ↑ | | |
| Overall survival | = | = | = | = | = | | |
| Disease-free survival | = | = | = | = | = | | |
| Local recurrence | = | = | = | | | | = |
| Distant recurrence | = | = | = | = | | | = |
| Wound/port recurrence | = | = | = | = | = | = | = |

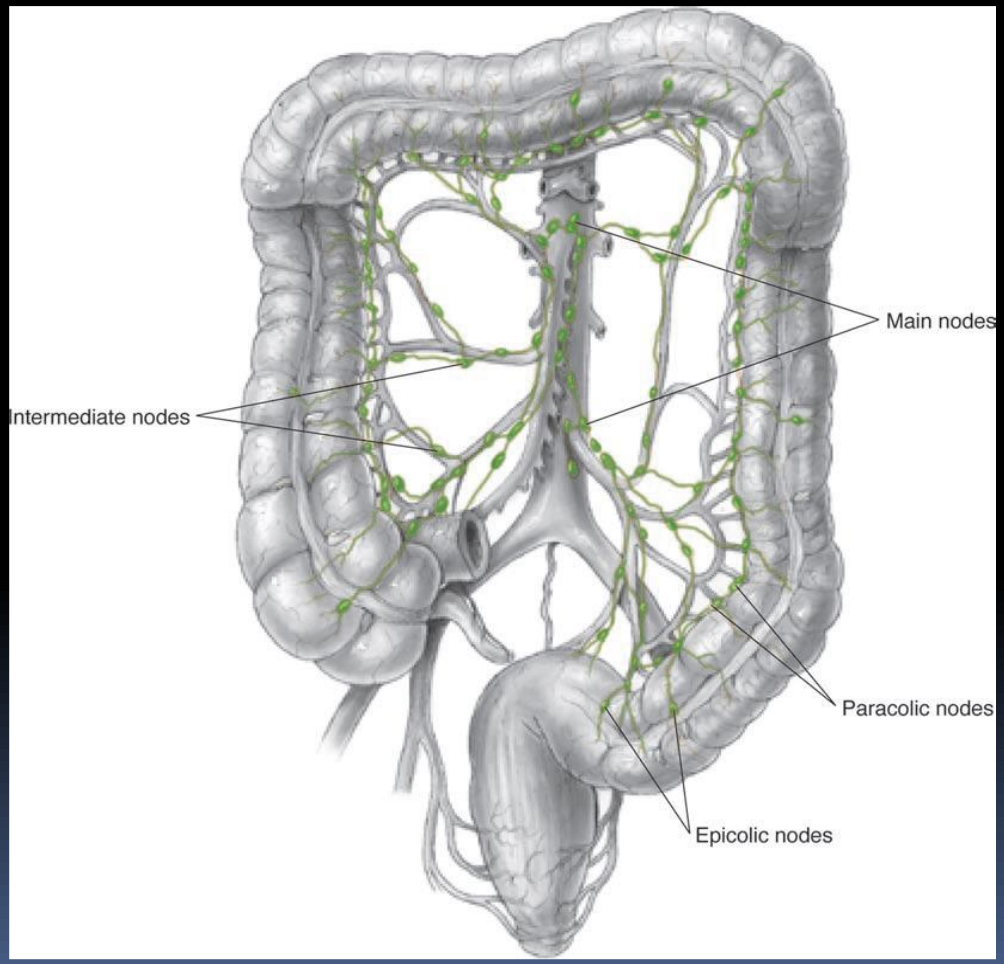
OR: operating room; EBL: estimated blood loss; LN: lymph node. Each outcome recorded is compared to open controls. ↑ or ↓ represents a statistically significant difference related to the outcome; otherwise, = represents no statistical difference.

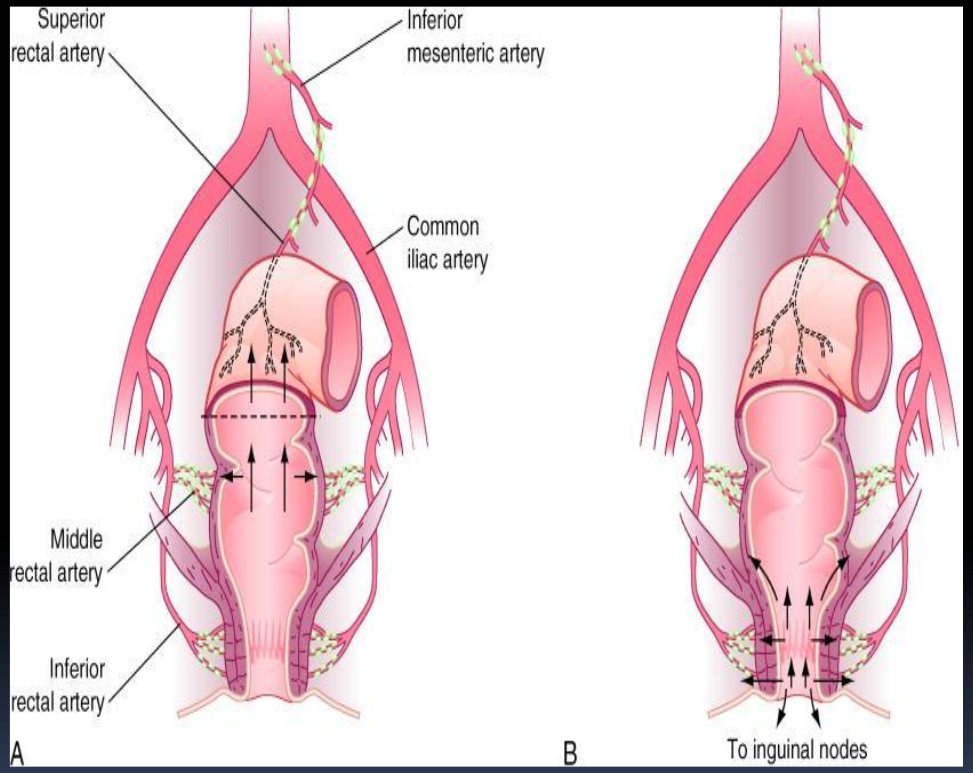
# AIM OF WORK

To compare the number of lymph nodes harvested during both open and laparoscopic colectomy and their significance from oncological point of view

# Theoretical background

# Lymph nodes distribution



**Lymph nodes :**

- *Temporary incubators "barriers" **(Halstead)***
- *Marker of biological behavior **(Fisher)***

- the National Cancer Institute, the College of American Pathologists, the United States National Quality Forum, Cancer Care Ontario and others have suggested that a minimum of 12 lymph nodes be removed en bloc and assessed with the colon cancer specimen *(Wright et al., 2009).*

## Factors affecting number of lymph nodes harvested:

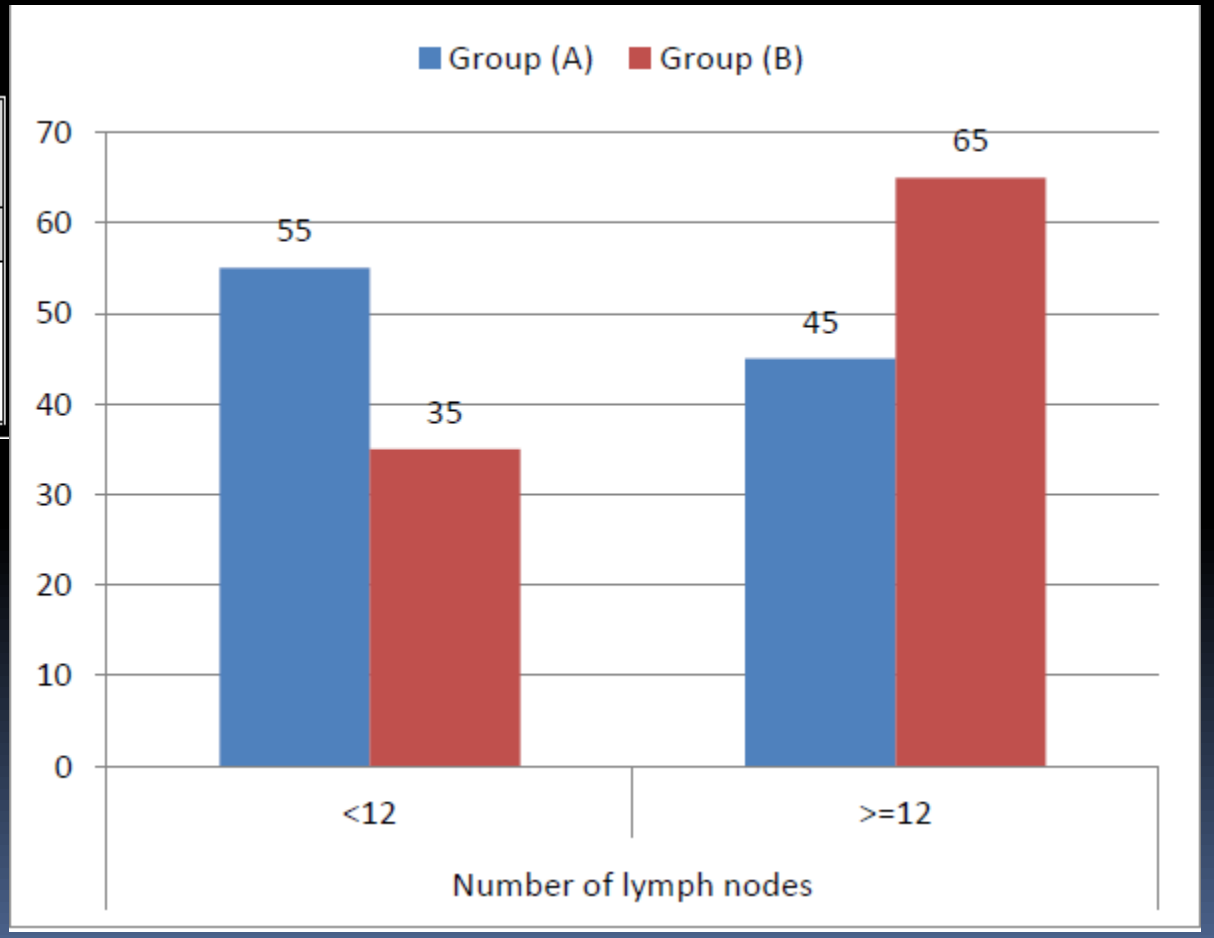
- The surgeon
- The pathologist
- The patient
- The tumor

# Patients and method

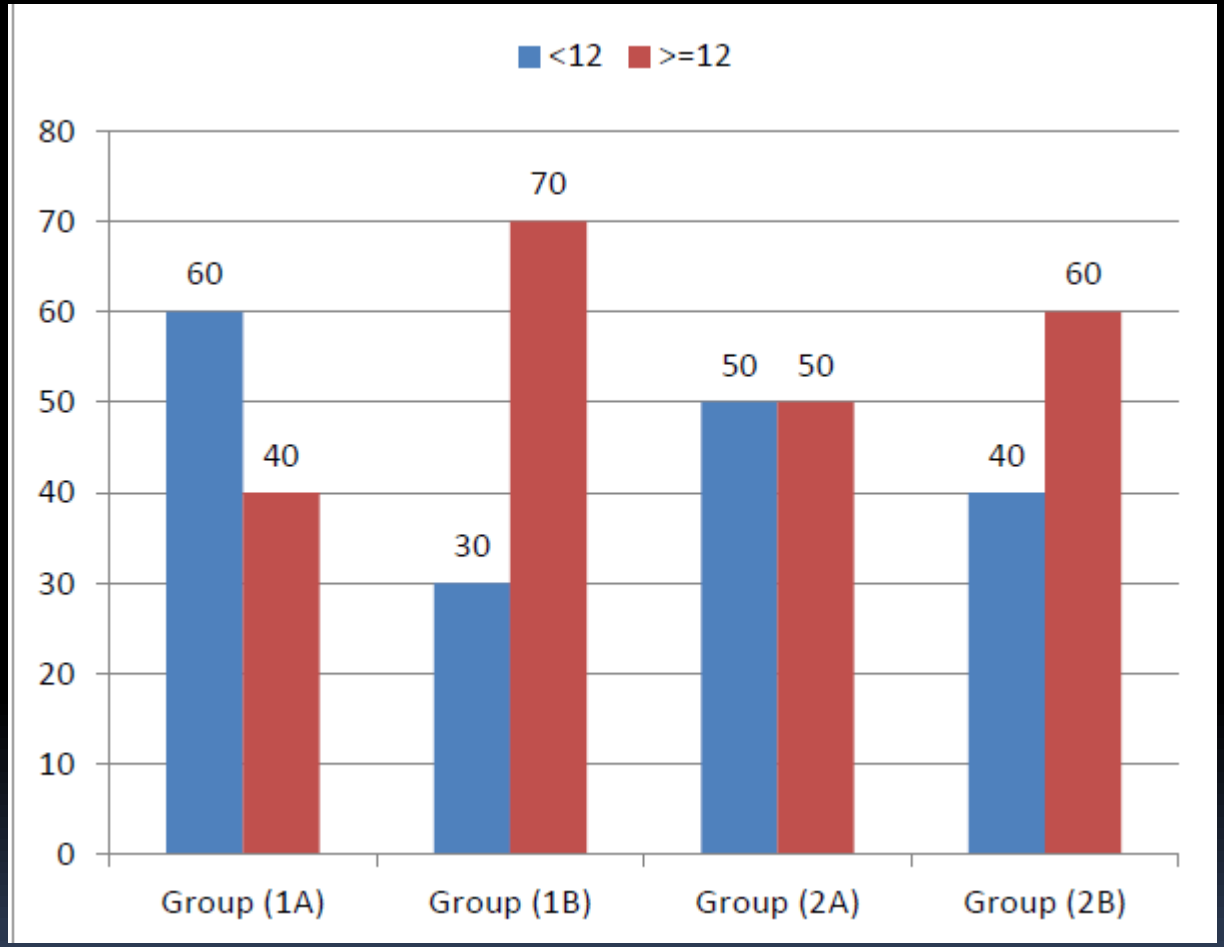
- A randomized retrospective comparative study
- Groups are: 1A: open left/sigmoid hemi-colectomy
- 1B: laparoscopic left/sigmoid hemi-colectomy
- 2A: open anterior/abdomino-perineal resection
- 2B: lparoscopic anterior/abdomiino-perineal resection

# The results

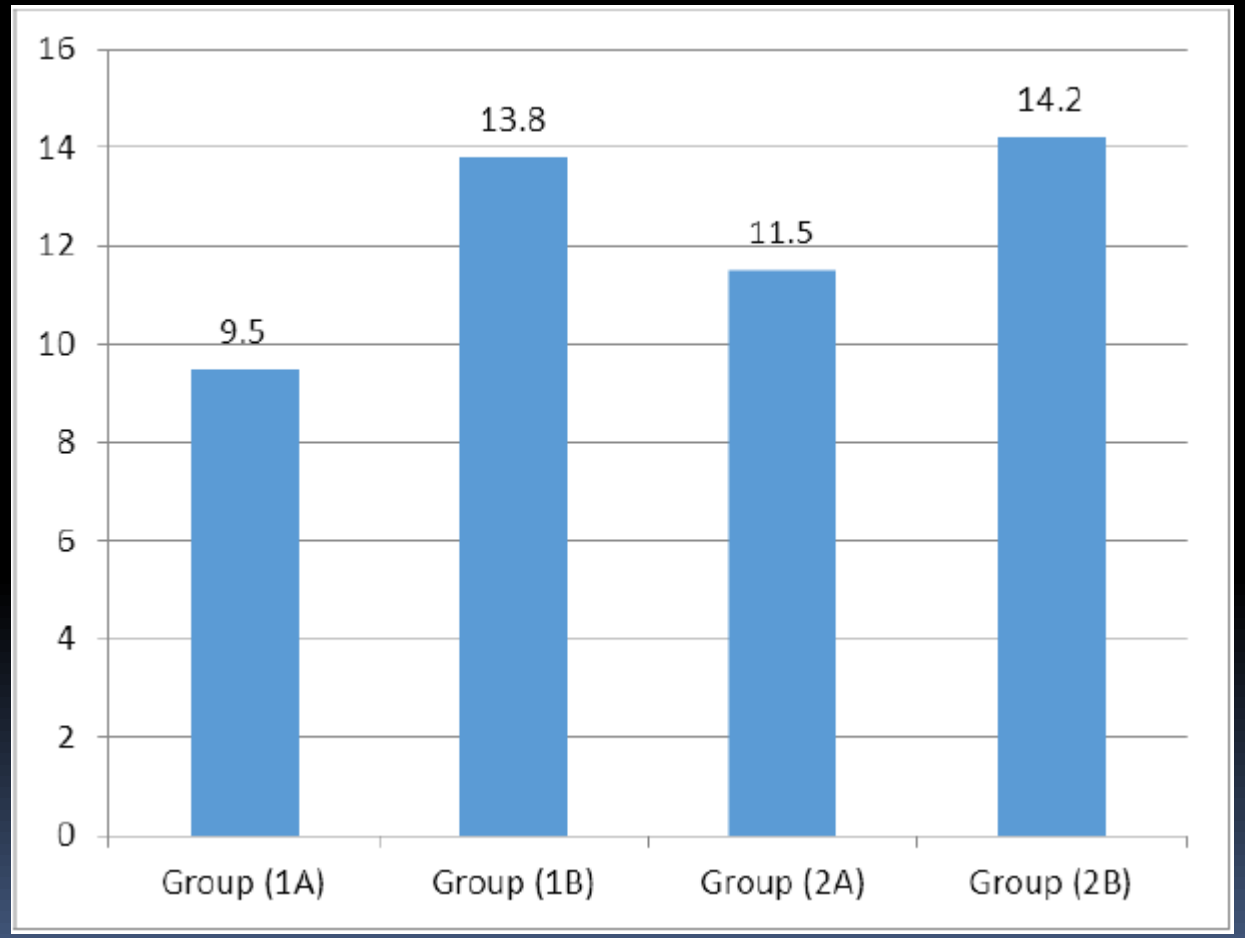
| Number of lymph nodes | Groups | | | | Chi-square test | |
|---|---|---|---|---|---|---|
| | Group (A) | | Group (B) | | | |
| | No. | % | No. | % | x2 | p-value |
| <12 | 11 | 55 | 7 | 35 | 1.616 | 0.204 (NS) |
| >=12 | 9 | 45 | 13 | 65 | | |
| Total | 20 | 100 | 20 | 100 | | |



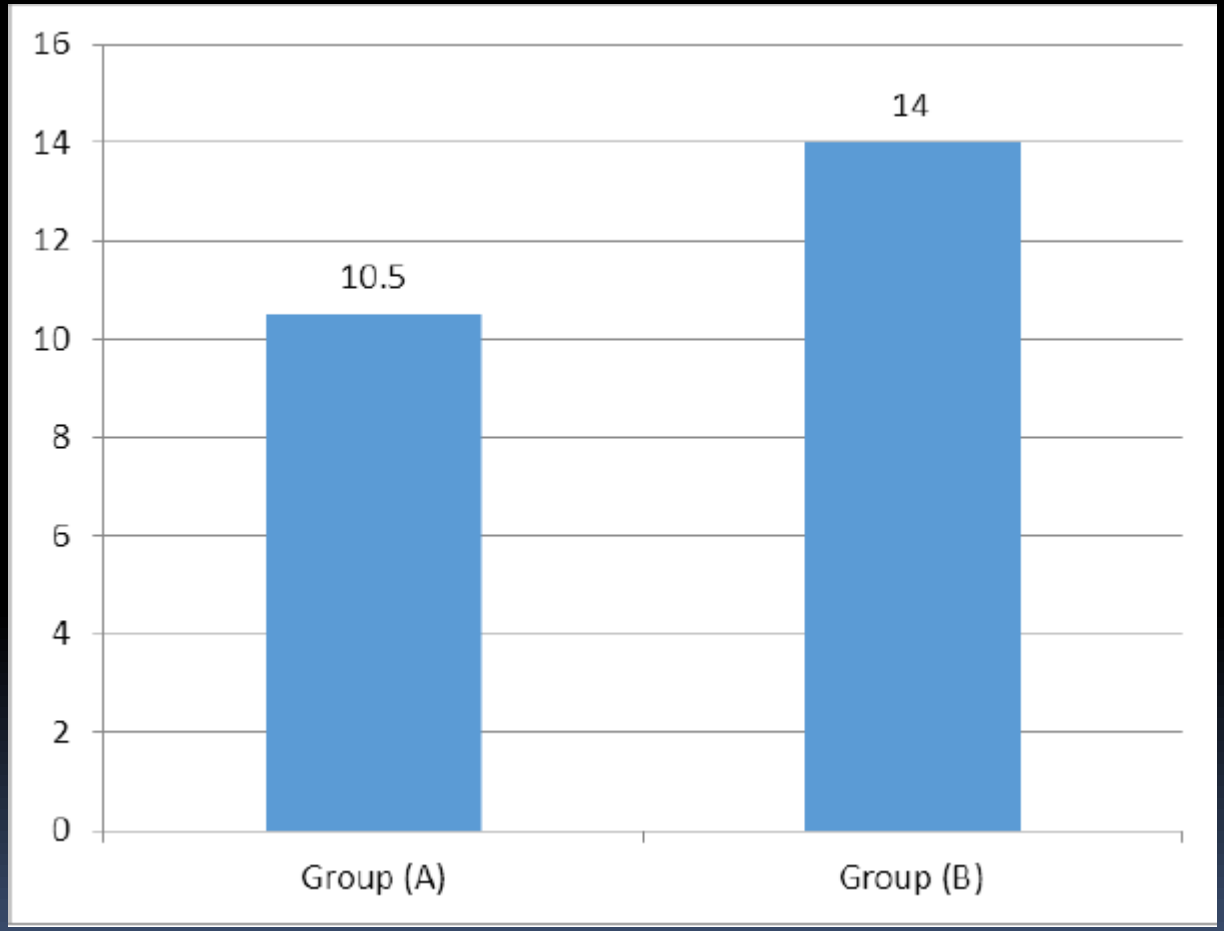
| Groups | Number of lymph nodes | | | | Chi-square test | |
|---|---|---|---|---|---|---|
| | <12 | | >=12 | | | |
| | No. | % | No. | % | x2 | p-value |
| Group (1A) | 6 | 60 | 4 | 40 | 2.020 | 0.568 (NS) |
| Group (1B) | 3 | 30 | 7 | 70 | | |
| Group (2A) | 5 | 50 | 5 | 50 | | |
| Group (2B) | 4 | 40 | 6 | 60 | | |
| Total | 18 | 45 | 22 | 55 | | |



| Groups | Number of lymph nodes | | ANOVA | |
|---|---|---|---|---|
| | Mean | Std. Deviation | F | p-value |
| Group (1A) | 9.50 | 4.35 | 2.286 | 0.095 (NS) |
| Group (1B) | 13.80 | 3.77 | | |
| Group (2A) | 11.50 | 5.34 | | |
| Group (2B) | 14.20 | 4.69 | | |



| Groups | Number of lymph nodes | | t-test | |
|---|---|---|---|---|
| | Mean | Std. Deviation | t | p-value |
| Group (A) | 10.50 | 4.85 | -2.454 | 0.019 (S) |
| Group (B) | 14.00 | 4.14 | | |



- *Conclusion*
- *Recommendations*

# Thank you