

## Thoracic Anaesthesia in National Cancer Centre of Mongolia

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### Abstract

Cancer is the second cause of mortality in the population increasing over last ten years in Mongolia. In 2014 registered 5485 cancer patients and 3530 were new patients. Before 2007, thoracic surgery had used conventional tube in general anaesthesia, then surgical access was not enough, surgery to heart function collapsed load pressing force involved in the hand, which made interior breath from the lungs, heart and respiratory failure, lung injury. In addition, respiratory tract filled with blood sputum, and it takes long time in intensive care due to disorders such as conjunctivitis and content blocking surgical lengthening. During post-surgery complications and several deaths occurred.

**Keywords:** One lung ventilation; Thoracic anaesthesia

### Introduction

Cancer is the second cause of mortality in the population increasing over last ten years in Mongolia. In 2014 registered 5485 cancer patients and 3530 were new patients. Before 2007, thoracic surgery had used conventional tube in general anaesthesia, then surgical access was not enough, surgery to heart function collapsed load pressing force involved in the hand, which made interior breath from the lungs, heart and respiratory failure, lung injury. In addition, respiratory tract filled with blood sputum, and it takes long time in intensive care due to disorders such as conjunctivitis and content blocking surgical lengthening. During post-surgery complications and several deaths occurred.

### Goal

When NCC thoracic surgery double lumen tube used as a real possibility right and left bronchial tube separates the lungs, reduce surgical time and postoperative complications.

### Study Objectivities

The purpose of thoracic anaesthesia used double lumen tube is adapted Mongolian human characteristics, surgery and postoperative complications and it prevent to increase the death.

### Materials and Methods

This study gives in the National Cancer Centre in 2012-2014 during thoracic surgery; double lumen tube anaesthesia department in meeting the study inclusion criteria included in the 2012-2014. 160 patients in treatment groups, III hospital (Shastin's) 160 clinical cardiovascular surgeries, patients took part in the control group.

During the study, pairs and study and control group patients, arterial blood 0.1-0.2ml of oxygen partial pressure (PaO<sub>2</sub>), carbon

dioxide pressure (PaCO<sub>2</sub>), conducted a study monitoring of oxygen saturation (SaO<sub>2</sub>) and acidity (PH).

The study revealed that anaesthesia using mechanical ventilation (CPAP, PEEP, PSV, PCV, ACV, CMV and SIMV) form.

### Results

During one lung anaesthesia average in monitor (SpO<sub>2</sub>) -95.09% ± 1.07 and blood (SaO<sub>2</sub>) -92.65% was ± 5.69 (P<0.032). After surgery, this study has ICU-average 2.2 ± 1.35 days, he had complications 19.65% and 1.64% of death. In 2003 NCC postoperative ICU of stay 6-10 days, of complications -37%, death was 43% (Tables 1 and 2).

| Subjects                              | Result             | P утга  |
|---------------------------------------|--------------------|---------|
| Tidal volume of both lungs            | 7.77 ± 1.07 ml/ kg |         |
| Tidal volume of one lung              | 5.87 ± 0.46 ml/kg  | p<0.014 |
| DLT diameter (Mongolian female)       | 3.43 ± 2.25 (Fr)   | p<0.093 |
| DLT diameter (Mongolian male)         | 37.09 ± 4.69 (Fr)  |         |
| DLT deep (151-160 cm height female)   | 27.68 ± 2.47 cm    |         |
| DLT deep (161-170 cm height male)     | 28.43 ± 2.6 cm     | p<0.004 |
| In noninvasive (SaO <sub>2</sub> )    | 95.09 ± 1.07%      | p<0.032 |
| In arterial blood (SpO <sub>2</sub> ) | 92.65 ± 5.69%      |         |
| Variation of PaCO <sub>2</sub>        | 37.11 ± 14.6       | p<0.028 |
| Variation of PaO <sub>2</sub>         | 119.15 ± 49.52     |         |

**Table 1:** The statistical result of double lumen endotracheal tube placement.

| Surgery type      | N | % |
|-------------------|---|---|
| Esophagus surgery |   |   |

|   |    |        |
|---|----|--------|
| Ivory Lewis                                 | 37 | 23.10% |
| Other                                       | 19 | 11.90% |
| Lung surgery                                |    |        |
| Pulmectomy                                  | 24 | 15%    |
| Lobectomy, segmectomy ,resections           | 57 | 35.60% |
| To probe thoracotomy                        | 3  | 1.90%  |
| Other (Tuberculosis, Ehinococcus,... stomy) | 20 | 12.50% |

**Table 2:** Comparison of operation type.

### Conclusion

During our study, one lung ventilation blood oxygen levels in the peripheral veins (SpO<sub>2</sub>) 95.09 ± 1.07%, arterial blood (SaO<sub>2</sub>) 92.65 ± 5.69% (P<0.032). In the study group, Mongolian woman having double lumen tube 35 (Fr) diameters 27.68 ± 2.47 cm depth, of 37 males (Fr) felt that the appropriate place deep in diameter 28.43 ± 2.6 cm.

Other studies this depth is usually between 28-30 cm and 170-190 cm patient. Researchers have every 10cm height double lumen tube placement changed to 1 cm [40].

We significantly had complications 19.65% and 1.64% of death. During one lung anaesthesia 18.75% of patients in the study group used a mechanical ventilation forms are considered a kind of post-surgery complications, one of the most important factor in reducing mortality.

Other researchers performed a retrospective review of all perioperative deaths following esophagectomy for oesophageal cancer at the Mayo Clinic, Rochester from 1993 through 2009. Of 1522 esophagectomies, perioperative mortality occurred in 45 (3.0%) [41].

8 of 16 Dutch cardiothoracic centres participated and collected data on 4066 procedures and 183 surgical site infections, revealing a surgical site infection rate of 2.4% for sternal wounds and 3.2% for harvest sites. 61% of all surgical site infections were recorded after discharge [42-51]. Our study the comparative analysis other researchers, in one lung anaesthesia process felt the safety of patients in Mongolia.

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