

## **Abstract:**

**Aims:** The blind percutaneous tracheostomy (PCT) technique has significant potential complications. This study aimed to determine whether bronchoscopic guided PCT, has less procedure related complications and better outcome compared to blind method in critically ill patients or not.

**Settings and Design:** This is a non randomized study was prospectively conducted on eighty one patients who underwent bedside percutaneous tracheostomy at the Critical Care Department at Damanhour Medical National Institute in the period from June 2013 to June 2015.

**Methods and Material:** 81 patients underwent PCT were included. 34 underwent blind PCT (group A) and 47 underwent bronchoscopic guided PCT (group B). Two groups were compared regarding procedure related complications and outcome.

**Statistical analysis used:** Data were collected, revised, coded and entered to the Statistical Package for Social Science (IBM SPSS) version 18 and the following were done.

**Results:** Overall, complications were higher in group A compared to group B (82.35% vs. 36.17%, p value < 0.05). False passage, pneumothorax, surgical emphysema, and trachea-oesophageal fistula were significantly statistically higher in group A compared to group B (32.4% vs. 0%, 11.8% vs. 0%, 14.7% vs. 0%, and 35.3% vs. 0%, P value 0.0001, 0.016, 0.007, and 0.0001 respectively). Successful weaning and decannulation were significantly higher in group B compared to group A (46.8% vs. 23.5%, and 29.8% vs. 5.9% , p value 0.032 and 0.008 respectively). Although length of ICU stay was lower and survival rate was higher in group B, yet these findings were statistically insignificant.

**Conclusions:** Bronchoscopic guided PCT has less procedure related complications and better outcome compared to blind method in critically ill patients.

**Key-words:** percutaneous, tracheostomy, blind, bronchoscopic

**Key message:** Bronchoscopic guided Percutaneous Tracheostomy has less procedure related complications and better outcome compared to blind method in critically ill patients. We recommend to routinely use flexible bronchoscopy in Percutaneous Tracheostomy performed in critically ill patients.