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# EVALUATION OF ROLE OF EXPERIENCE IN REDUCING HEMODYNAMIC RESPONSE DURING LARYNGOSCOPY IN PATIENTS UNDERGOING SURGERY UNDER GENERAL ANESTHESIA

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## ABSTRACT

**Background:** Laryngoscopy and endotracheal intubation often provoke a sympathetic stress response. The anesthesiologist's experience may influence patient stability. **Objective:** To evaluate the impact of anesthesiologist experience on the hemodynamic response to laryngoscopy and intubation. **Methods:** A cross-sectional study with 384 ASA I–II patients (age 18–60 years) undergoing general anesthesia. Patients were assigned into three groups based on the operator: Junior Residents (JR), Senior Residents (SR), and Consultants. Hemodynamic variables, ease of mask ventilation, intubation attempts, time, and complications were compared. **Results:** Hemodynamic changes were significantly higher in the JR group than in the Consultant group ($p<0.001$). Consultants had the highest first-attempt success (96.1%) and shortest intubation time. The JR group experienced more desaturation episodes and required more airway adjuncts. **Conclusion:** Experience significantly reduces hemodynamic fluctuations and improves intubation success, indicating its crucial role in safe airway management.

## KEYWORDS :

## INTRODUCTION

Laryngoscopy induces cardiovascular stress, primarily due to stimulation of oropharyngeal structures. This transient hypertension and tachycardia may endanger high-risk patients. Experienced anesthesiologists can minimize this response by quicker, more efficient intubation. They anticipate patient responses and adjust anesthetic depth accordingly.

This study aims to compare hemodynamic changes and airway parameters based on the experience level of the anesthesiologist performing the intubation.

### Aims And Objectives

**Aim:**

To assess the role of anesthesiologist experience in attenuating hemodynamic response during laryngoscopy.

**Objectives:**

1. To evaluate ease of mask ventilation, desaturation, airway adjunct use, and hemodynamic changes in the JR group.
2. To evaluate the same parameters in the SR group.
3. To evaluate the same in the Consultant group.
4. To statistically compare outcomes across the three groups.

## MATERIALS AND METHODS

**Study Design:** Analytical cross-sectional study

**Sample Size:** 384 (128 per group), based on the formula:

$n = \frac{Z^2 P(1-P)}{d^2}$, $Z=1.96$, $P=0.5$, $d=0.05$

**Inclusion Criteria:**

- ASA I & II patients aged 18–60 years
- Elective surgery under general anesthesia

**Exclusion Criteria:**

- Anticipated difficult airway
- Emergency surgeries
- Cardio-respiratory instability

**Procedure:**

**All patients received standard premedication and general anesthesia. Laryngoscopy was performed by the assigned group (JR/SR/Consultant). Parameters recorded:**

- HR, MAP, $SpO_2$ at baseline, and at 1, 3, 5 min post-intubation
- Number of intubation attempts
- Time to successful intubation
- Desaturation (<90%)
- Use of adjunct airways
- Intubation Difficulty Score (IDS)

**Data Analysis:**

SPSS/R used for statistical analysis. ANOVA/Kruskal-Wallis for comparing means. Chi-square for categorical data. $p<0.05$ considered significant.

## RESULTS

**Demographics:** No significant difference in age, sex, or ASA grade across groups.

**Hemodynamic Changes:**

HR and MAP increased most in the JR group (mean HR at 1 min: 108.2 bpm) vs Consultants (92.3 bpm).

Differences significant at all time points ($p<0.001$).

**Airway Parameters:**

- **Mask Ventilation:** Easy in 96.1% (Consultant), 88.3% (SR), and 76.6% (JR).
- **Desaturation:** JR – 12.5%, SR – 4.7%, Consultant – 1.6%.
- **Airway Adjuncts:** JR – 18.7%, SR – 7.8%, Consultant – 1.6%.
- **Intubation time (Sec):** JR – 55.3, SR – 42.6, Consultant – 30.9.
- **First-attempt Success:** JR – 62.5%, SR – 84.4%, Consultant – 96.1%.
- **Failed Intubation:** JR – 4.7%, SR – 0.8%, Consultant – 0%.

## DISCUSSION

The findings indicate a direct correlation between anesthesiologist experience and patient safety. Consultant-performed intubations led to reduced hemodynamic fluctuations and higher intubation success. These outcomes are consistent with prior literature (Maharaj et al., Wang et

al.), emphasizing the value of structured airway training for junior staff.

## CONCLUSION

Anesthesiologist experience plays a critical role in minimizing hemodynamic response and improving intubation outcomes during laryngoscopy. Supervised airway training and gradual skill development are essential to ensure patient safety in anesthetic practice.

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