

Use of Esmolol During Induction of General Anesthesia to Reduce Opioid Drug Usage. A Review of the Current Literature and Creation of an Educational Module for Anesthesia Providers.

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Problem

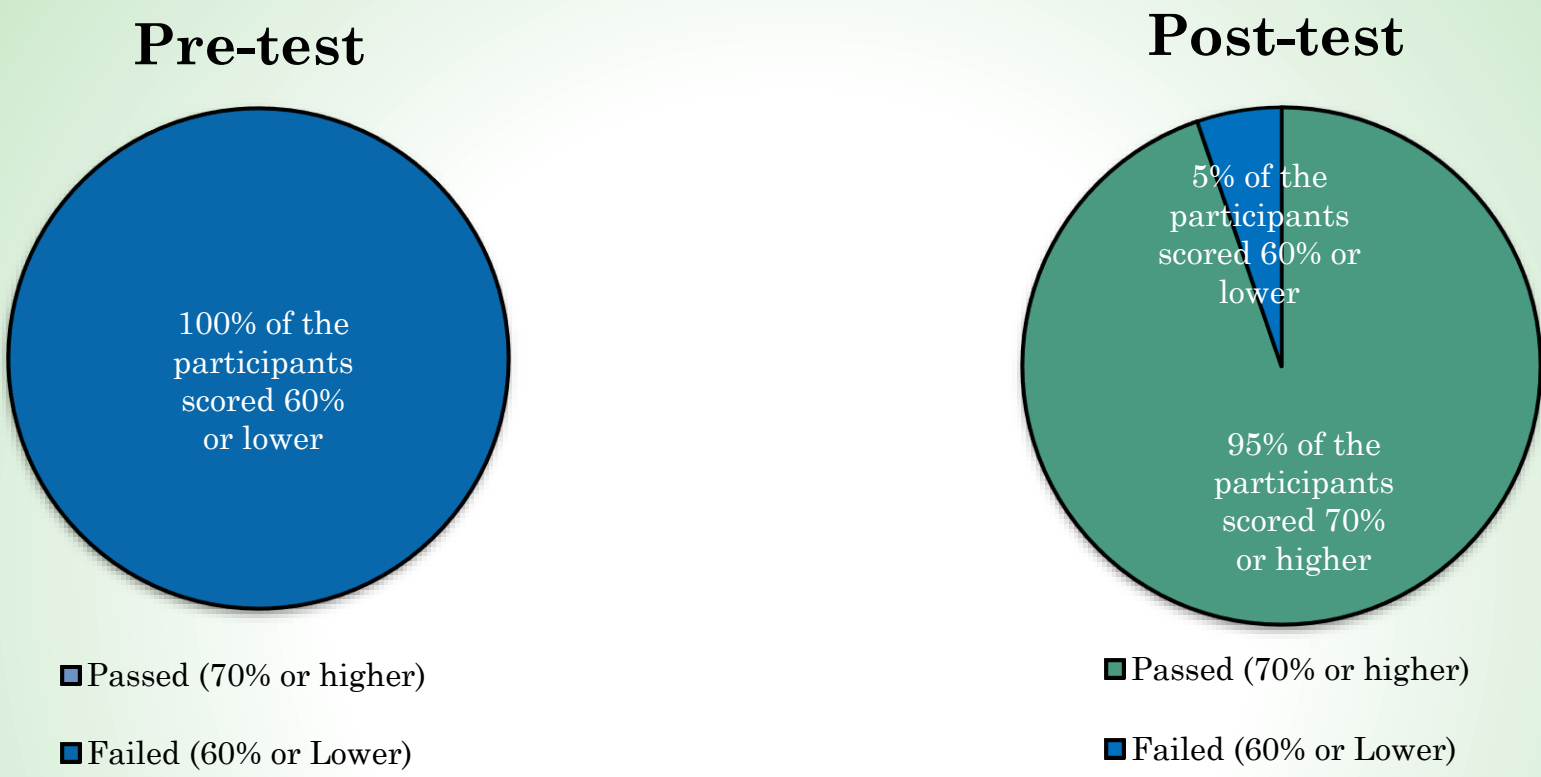
Opioids are commonly administered to abate the sympathetic outflow caused by direct laryngoscopy, but there is a more effective non-opioid, esmolol. If esmolol is utilized instead of opioids, opioid use may decrease. Education may facilitate use of esmolol for direct laryngoscopy.

Methods

- Subjects :19 AdventHealth Nurse Anesthesia Students.
- Literature review and creation of PowerPoint Education Module
- IRB approval of scholarly project
- Pretest administered (evaluation of baseline knowledge)
- PowerPoint presentation administered
- Post-test administered: (evaluation of knowledge base increase)
- Statistical analysis
- Interpretation of data

Literature Review

- Direct laryngoscopy →sympathetic outflow (↑heart rate &blood pressure)
- Esmolol or fentanyl use ↓ sympathetic response to direct laryngoscopy
- Studies agree in administering 1.5-2 mg/kg 3 minutes before direct laryngoscopy
- Statistics show esmolol is superior to fentanyl
 - Esmolol -more effective for ↓ diastolic, systolic, and mean arterial pressures spikes vs. fentanyl
 - Esmolol- lower risk of tachycardia and hypertension



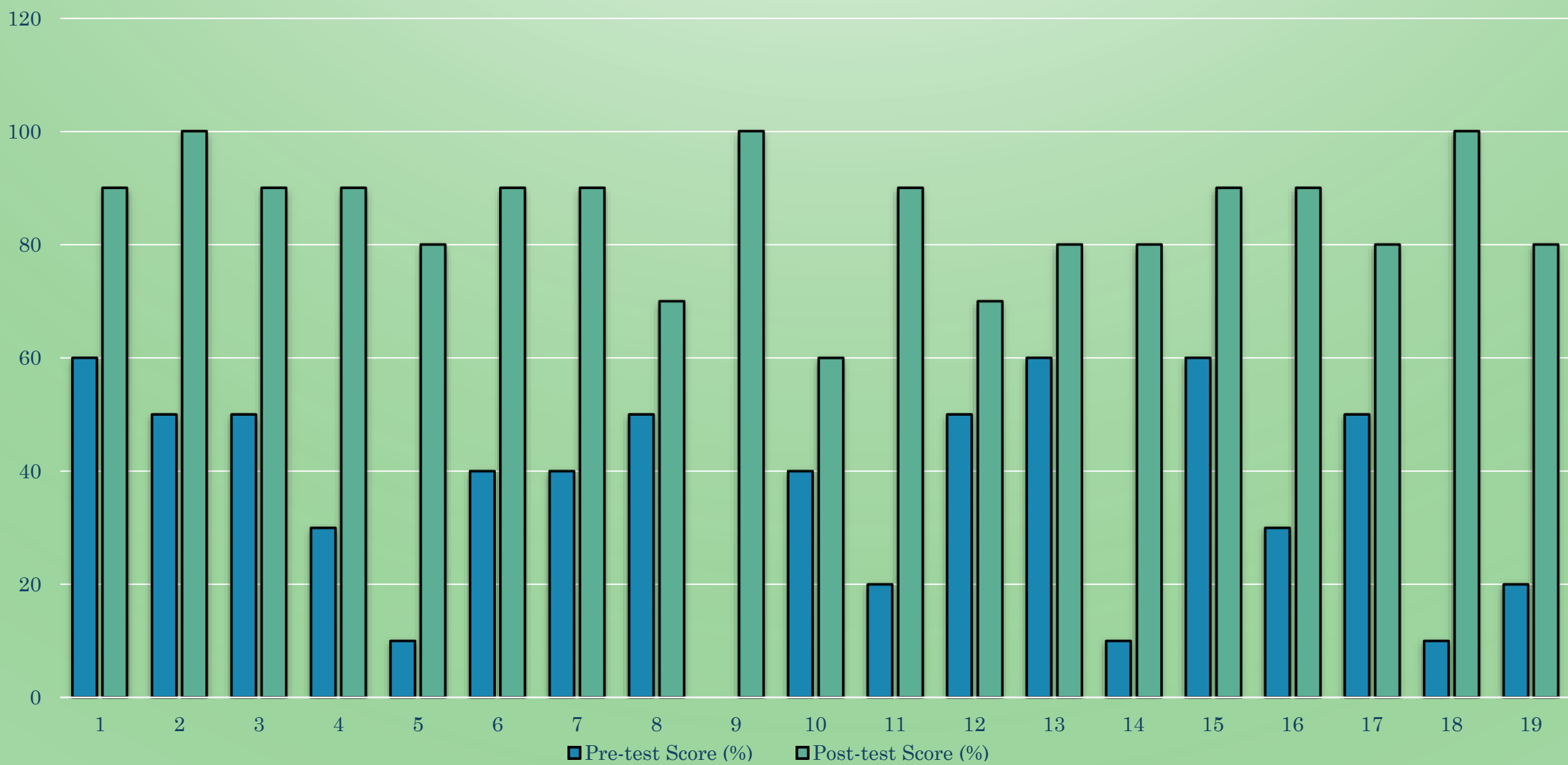
Paired Sample Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	35.79	19	19.23994	4.41395
	Post-test	85.26	19	10.73334	2.46240

Analysis and Conclusions

- Knowledge base increased in the 2019 NAP Cohort
 - t value of -8.931 associated with p <0.001.
 - statistically significant increase
 - average percentage scores between PreTest and PostTest increased significantly.
- Mean Pretest score: -35.8 vs. mean Posttest score 85.3
- Limitations of this study included the small sample size and time limit restrictions

Paired Sample Test								
	Paired Difference					t	df	Sig (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-test	49.47	24.15	5.54	-61.11	-37.84	8.93	18	.00
Post-test								

PRE AND POST



Impact of Findings

The educational module increased the average test score, showing an increase in knowledge base. The increase in knowledge base obtained by the 2019 DNAP Cohort, will optimistically increase esmolol use over fentanyl during direct laryngoscopy.

References

Available upon request.

Acknowledgements

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