

REVIEW QUESTION

In adult patients, how does the use of *cricoid pressure* during RSI, compared to no cricoid pressure, affect *aspiration rates*?



INTRODUCTION

- **Rapid sequence intubation (RSI)** is a widely used technique in emergency and critical care settings to secure the airway while minimizing aspiration risk
- **Cricoid pressure (CP)**, also known as the Sellick maneuver, is traditionally applied during RSI to prevent gastric content regurgitation by compressing the esophagus
- **Effectiveness of CP remains controversial** due to conflicting evidence regarding its impact on aspiration prevention and airway management

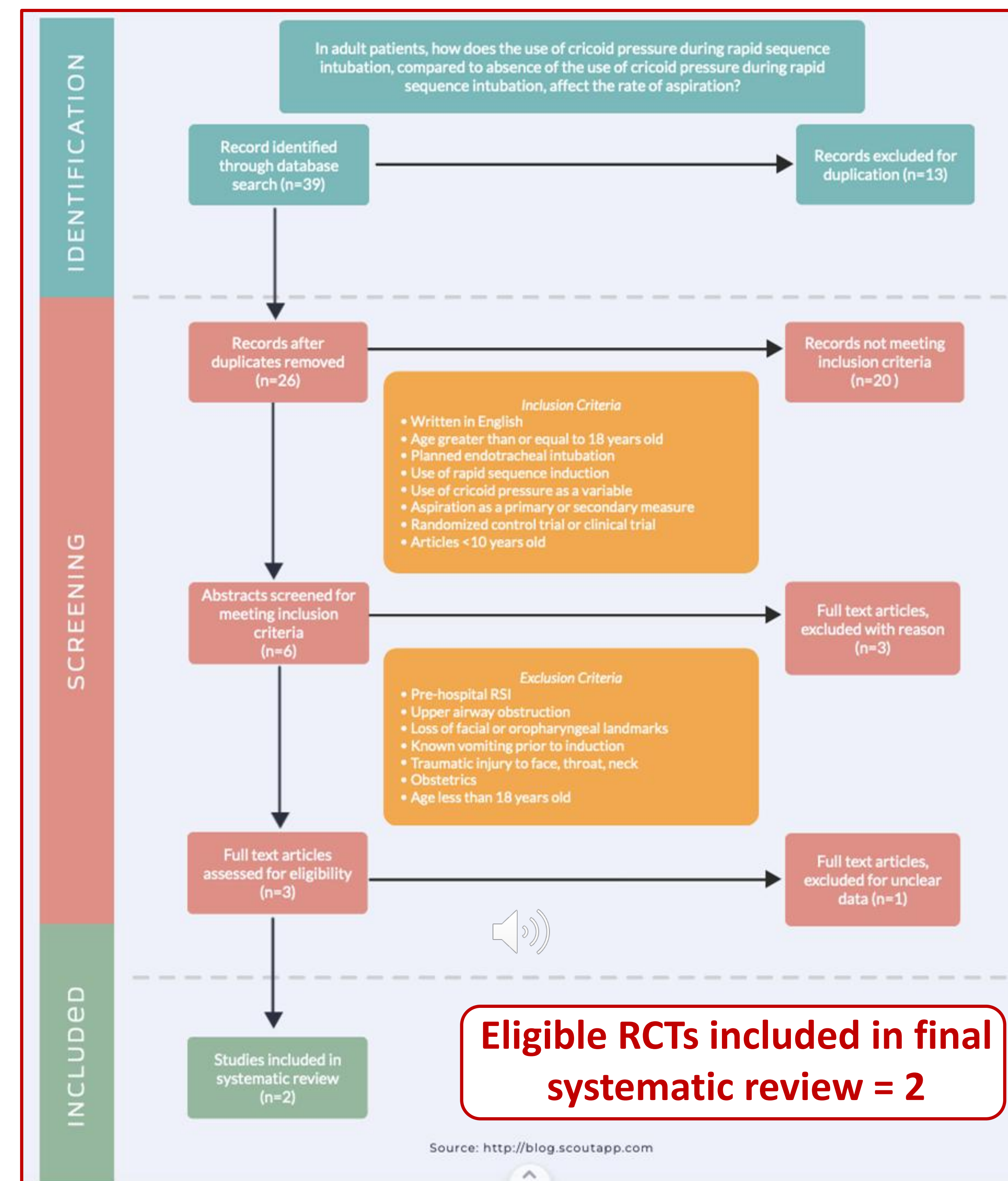
BACKGROUND

- Critically ill patients requiring intubation are at high risk for aspiration due to altered consciousness and comorbidities
- **Objective:** To systematically review and analyze the best available evidence on the effectiveness of CP in preventing aspiration during RSI in adult patients
- **Keywords:** Rapid sequence intubation or RSI, Cricoid pressure or Sellick maneuver, Adult, Aspiration or Regurgitation

METHODS

- **Study Design:** Systematic review and meta-analysis
- **Databases Searched:** PubMed, CINAHL, Embase
- **Inclusion Criteria:** Full-text English studies, adult patients (≥ 18 yrs), RSI in inpatient facility, intervention involves CP use, primary or secondary outcome measure of aspiration
- **Exclusion Criteria:** Prehospital settings, pre-induction vomiting, significant facial or airway trauma, obstetric population, studies published > 10 years ago
- **Quality Appraisal**
 - Eligible studies compiled into Table of Evidence and reviewed by at least two independent reviewers
 - Quality assessed using standard JBI critical appraisal checklist

SEARCH STRATEGY



DATA EXTRACTION & SYNTHESIS

- **Outcomes:** Aspiration events & CP-associated complications
- **Two randomized control trials** ($n = 1,789$) were analyzed using a random-effects model
- **Risk Ratio:** (95% CI 0.374, 0.127)
 - Assesses for aspiration incidence
 - Suggests reduced aspiration but high variability
- **Heterogeneity:** 94%
 - Suggests high variability between studies

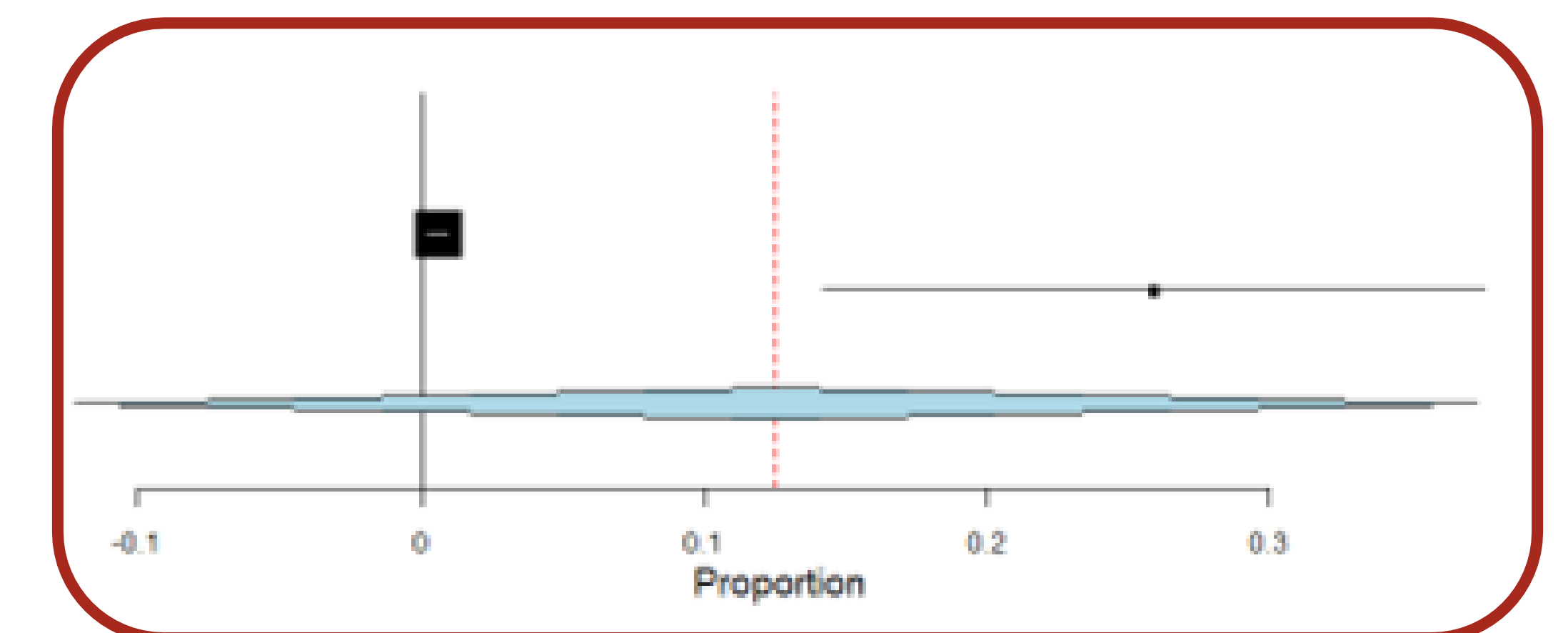
FULL TEXT & CONTACT INFORMATION



Courtney Campanella
cc2009@sn.rutgers.edu
Jacqueline Johnston
jj864@sn.rutgers.edu
Tara O'Rourke
to184@sn.rutgers.edu

RESULTS

- Aspiration occurred in **less than 1% of patients**, with no significant difference between CP and non-CP groups
- CP was associated with **airway management challenges**: Poorer laryngoscopic views, increased difficulty in intubation, or cricoid cartilage injuries
- Maintaining effective CP force was challenging and **did not consistently occlude the esophagus**



DISCUSSION

- **Efficacy of CP in preventing aspiration is questionable**
- CP may cause more harm than benefit due to increased airway management difficulties
- Findings challenge the traditional practice of CP in RSI
- **Implications for Practice**
 - Consider alternatives to CP (video laryngoscopy, gastric ultrasound) to optimize patient safety
 - Standardized RSI protocols should be developed to ensure consistent and effective airway management practices
 - Further research needed to explore evidence-based alternatives

CONCLUSIONS

- **CP does not significantly reduce aspiration risk during RSI**
- Complications warrant reconsideration of routine use
- Future studies should focus on refining RSI strategies and airway management techniques
- **Study Limitations**
 - Limited sample size (2 RCTs)
 - Exclusion of certain populations
 - Variability in CP technique applied
 - Difficulty in measuring applied CP force
 - Potential for undetected aspiration events
 - High heterogeneity (94%) indicates variability in study conditions and outcomes