



# 2017 SAM RESEARCH COMMITTEE

ARTICLE REVIEW OF THE MONTH



# ARTICLE REVIEW

1. PREDICTION OF DIFFICULT MASK VENTILATION USING A SYSTEMATIC ASSESSMENT OF RISK FACTORS VS. EXISTING PRACTICE - A CLUSTER RANDOMISED CLINICAL TRIAL IN 94,006 PATIENTS.

2. SUBMITTED BY MATTEO PAROTTO M.D

3. AUTHORS: NØRSKOV AK, WETTERSLEV J, ROSENSTOCK CV, AFSHARI A, ASTRUP G, JAKOBSEN JC, THOMSEN JL, LUNDSTRØM LH; COLLABORATORS. SOURCE: J CLIN ANESTH 2017;36:136-141

4. SOURCE: ANAESTHESIA. 2017 MAR;72(3):296-308.

5. LINK: [HTTPS://WWW.NCBI.NLM.NIH.GOV/PUBMED/27882541](https://www.ncbi.nlm.nih.gov/pubmed/27882541)



## SUMMARY

This large, multicenter cluster randomized study is part of a series based on very large

datasets. It aimed to test whether introducing a hospital-wide protocol of systematic assessment for difficult airway management risk factors helped better predict difficult mask ventilation than the

existing practice (control). The study included 94,006 patients. The systematic intervention did not alter the overall incidence of unpredicted difficult mask ventilations (0.91% and 0.88%,  $p = 0.90$ ),

but of the patients who were found to be difficult to mask ventilate, a smaller proportion was not predicted in the intervention group than in the control group (86.3% vs 91.2%,  $p = 0.016$ ). However, there was a higher the number of mask ventilations falsely predicted to be difficult than in the control group (0.64% vs. 0.35%,  $p = 0.045$ ).

## Limitations

The study has a few limitations, that were well described by the Authors. First, given that anesthesiologists were not blinded to the intervention, they may have been sensitized by the assessment to the possibility of difficult mask ventilation, with higher reporting rates as a consequence. Second, even though none of the departments prior to the study had a systematic registry of risk factors for difficult mask ventilation, it is possible that high quality airway assessments took place in the control group, diluting the intervention effect.

Lastly, the sample size estimation was based on a previous paper from the group, which used the incidence of unpredicted difficult intubation. However, considerably more patients were mask ventilated than intubated during the trial period, hereby increasing the number of patients included and the statistical power for this part of the trial.

## Potential for Practice Change

Despite accurate assessment of potential risk factors, the overall proportion of unpredicted difficult mask ventilation was not reduced. Furthermore, this study highlights how the proportion of encountered difficulties that are unpredicted remains very high.

Accurate prediction in airway management appears elusive, hence the importance of preparing for the unexpected, always ensuring adequate back-up plans are in place. As Drs. Pandit and Heidegger write in the accompanying editorial, we should also remember the importance of individualized, expert clinical assessment, rather than aiming to develop a universal test to predict difficulty.

