

Lung protective ventilation in a non-ARDS setting: A tertiary centre survey and audit

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BACKGROUND AND GOAL OF STUDY

Lung protective ventilation (LPV), with tidal volume (TV) 6 ml/kg ideal body weight (IBW), improved outcome in patients with acute respiratory distress syndrome¹. Also after major abdominal surgery LPV (TV: 6-8 ml/kg IBW) reduced the rate of complications². While in guidelines LPV is recommended, its acceptance and compliance rate is yet unclear.

MATERIALS AND METHODS

A survey among ICU healthcare workers (staff: 31, trainees: 34, nurses: 99) of our 36-bed mixed ICU assessed their understanding of calculating IBW and determining the initial tidal TV by means of 3 cases (BMI 19, 26, 39). We also assessed their level of LPV approval in a non-ARDS setting.

To audit the daily practice of LPV, a retrospective analysis of ventilator settings was performed in all cardiac surgery patients (n=240) who were admitted to the ICU between June and November 2016. TVs, measured 2 hours after arrival in the ICU, were analysed in correlation with quality cut-offs for LPV: >8 ml/kg IBW and >10 ml/kg IBW.

RESULTS

28 (90%) staff, 28 (82%) trainees and 43 (43 %) nurses responded to the survey. Over all cases 35 (42%), 17 (20%) and 54 (42%) staff, trainees and nurses respectively used TV >8ml/kg. 4 (5%), 0 (0%) and 9 (5%) staff, trainees and nurses respectively used TV > 10 ml/kg IBW. Trainees (20%) used less TV of >8ml/kg IBW then staff (42%) and nurses (42%) (P<0.002). 23 (82%), 28 (100%) and 35 (81%) staff, trainees and nurses respectively approved LPV in a non-ARDS setting.

In the retrospective analysis (Fig 1) all 240 patients were on volume controlled ventilation. Mean delivered TV was 8.2 ml/kg IBW (+/-SD,±1). However, 139 (57.9%) patients received TV of >8ml/kg IBW and 16 (6.7%) TV of >10 ml/kg IBW. TV > 8 ml/kg IBW occurred in 46 (68%) of obese (68/240) patients (P=0.06). 50/60 (83%) females received TV > 8 ml/kg IBW in contrast to 89/180 (49%) males (P<0.001).

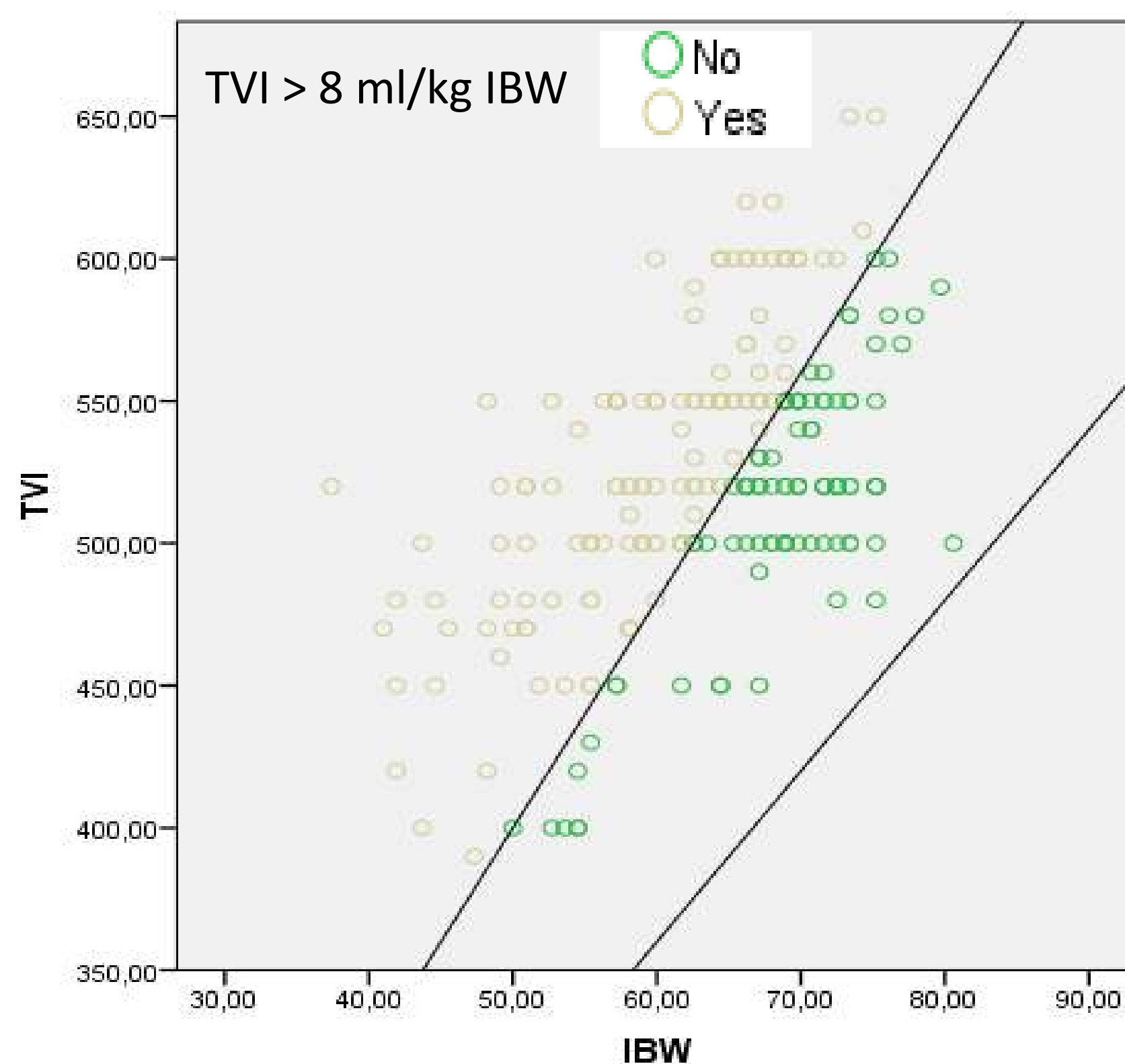


Fig 1: Retrospective analysis

CONCLUSIONS

Although the majority of our ICU healthcare workers advocated LPV in a non-ARDS setting, a too large proportion of patients, notably females and obese, were exposed to high TV.

REFERENCES

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