**Supplemental Digital Content**

1. **List of POSE study group**
2. **eMethods**

**This supplementary has been provided by the authors to give readers additional information about their work.**

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**2) eMethods**

Technical details on propensity score adjustment.

(i) *Definition of inverse propensity score weights.1* Denoting the sample size by n and the estimated propensity score values by pi, 1, …, n, inverse propensity score weights were defined by wi = 1 / pi and wi = 1 / (1 – pi), respectively, for benzodiazepine- and non-benzodiazepine-premedicated patients.1 To address stability issues resulting from very large weights (obtained, e.g., from treated patients with pi close to zero), we replaced the top 1 percent of the weights by their respective 99th percentile.

(ii) *Details on matching.* For the fourth sensitivity analysis (see below), pairs of benzodiazepine- and non-benzodiazepine-premedicated patients were formed. Three matching approaches were investigated and compared: First, we used a nearest-neighbor caliper matching approach without replacement that required pairwise propensity score differences to be smaller than 20% of the standard deviation of pi.2 Second, we used exact matching of the propensity scores, where differences less than 0.0001 were deemed to be equal to zero. Third, we performed coarsened exact matching with the covariates of the propensity score model, forming subclasses containing only benzodiazepine and non-benzodiazepine-premedicated patients that were exactly equal on the coarsened covariates (as implemented in the R add-on package MatchIt).3

Sensitivity analyses.

(i) *IPW analysis in subgroups of the POSE data.* For these analyses, inverse-propensity-score-weighted log-rank and Cox regression analyses were performed separately in subgroups defined by „Mini‐Cog score ≤ 3 points“ (n=4,093), “Mini-Cog score > 3 points” (n=5,374) and “surgical interventions” (n=8,441). Due to the subsetting, the propensity score model was modified as follows: For the first and second subgroups we excluded the covariate “Mini-Cog score ≤ 3 points”, and for the third subgroup we excluded the category “interventional” of the “type of intervention” covariate.

(ii) *Robustness of the propensity score model.* For this analysis we investigated the behavior of propensity score estimation by randomly leaving out subsets of the covariates from the logistic regression model described in the Methods section of the article. To this end, we fitted 100 logistic regression models with binary outcome variable „benzodiazepine premedication vs. non-benzodiazepine premedication“, where in each model the number of covariates was randomly reduced from 15to 12. Subsequently we compared the results of the inverse-propensity-score-weighted log-rank and Cox regression analysesthat were based on the 100 propensity score estimates.

(iii) *Subclassification analysis of the PATE.* For this analysis we stratified the POSE data by quintiles of the estimated propensity score values. Subsequently, following Stuart we fitted amixed-effects Cox regression model including random centre effects as well as fixed intercepts and treatment effects for each subclass.4 In addition, again following Stuart, we included fixed main effects for the 15 covariates already included in the propensity score model.4 The overall treatment effect with 95% CI was obtained by averaging the subclass-specific treatment effects (i.e. treatment by subclass interactions)Note that the random centre effects allow for adjusting the coefficient estimates for centre-specific characteristics (and thus, to some degree, for possibly unmeasured confounding caused by centre-specific selection and performance).

(iv) *Analysis of the PATT.* For this analysis we formed matched pairs of benzodiazepine- and non-benzodiazepine-premedicated patients, as described in the section “Technical details on propensity score adjustment” above. The matched data were analyzed using stratified log-rank tests and Cox regression models with a robust variance estimator that accounted for the clustering within matched sets (3).

(v) *Analysis of major complications.* Here we considered the binary outcome “major complications”, which was defined by either death within 30 days after intervention (n=388), any in-hospital complication according to the ACS NSQIP® (n=3172), or any complication after discharge (n=335). For analysis we used inverse-propensity-score-weighted logistic regression.

References

1. Austin PC. The use of propensity score methods with survival or time-to-event outcomes: reporting measures of effect similar to those used in randomized experiments. Statistics in Medicine 2014; 33: 1242–1258
2. Garrido MM, Kelley AS, Paris J, Roza K, Meier DE, Morrison RS, Aldridge MD. Methods for Constructing and Assessing Propensity Scores. Health Services Research 2014; 49: 1701-1720
3. Ho DE, Kosuke Imai, King IG, Stuart EA. MatchIt: Nonparametric Preprocessing for Parametric Causal Inference. Journal of Statistical Software 2011; 42: 1-28

Stuart EA. Matching methods for causal inference: A review and a look forward. Statistical Science 2010; 25: 1-21