

Investigating the Prevalence of, Influential Factors, and Intervention Efficacy for, Feline Peri-anaesthetic Hypotension

Authors: Bronwyn Bailey BSc(Hons), RVN; Amy Homer RVN MScVAA GradDipVN NCertACC PGCert AP PGCert Pain FHEA (dissertation supervisor)

Affiliations: University of Bristol, Langford Vets Small Animal Referral Hospital (LV)

Introduction

- Feline peri-anaesthetic hypotension (FPAH) is reported as a common anaesthetic complication
- FPAH can lead to blindness, renal, cardiac and brain ischaemia, and even death
- This research aimed to investigate the underlying causes of FPAH, the predictability of FPAH and evaluate the efficacy of current interventions for FPAH

Methodology

A quantitative retrospective study comparing cats that experienced hypotension (group H) with cats that maintained normotension (group N) under general anaesthesia (GA) at LV in 2022.

Statistical analysis included:

- Chi-squared
- Binary Logistic Regression
- Mann-Whitney U-test
- Wilcoxon signed-rank test

Results

- 49.4% incidence of FPAH
- Increased age, being non-pure breed, absence of IPPV and lack of arterial cannulation increased risk of FPAH
- Being female, undergoing surgical procedures, maintained on isoflurane, employing invasive blood pressure monitoring and increased anaesthetic duration decreased the risk of FPAH
- Anaesthetic duration as the sole independent predictor of FPAH, with an odds ratio of 0.836
- A bolus of fluid, glycopyrrolate, dopamine or ephedrine caused a significant increase in blood pressure

Discussion

- Prevalence of FPAH was comparable to previous studies
- The majority of patient, anaesthetic and procedure factors being insignificant rejects the hypothesis of predicting hypotension
- Further research should include:
 - Prospective format
 - Linear regression
 - Multi-centre study

Conclusion

- Profession to reflect on the high prevalence of FPAH.
- Majority of interventions for hypotension caused a significant increase in blood pressure promoting their efficacy and continued use.
- Noradrenaline, atropine and dobutamine should not be abandoned despite statistical insignificance.

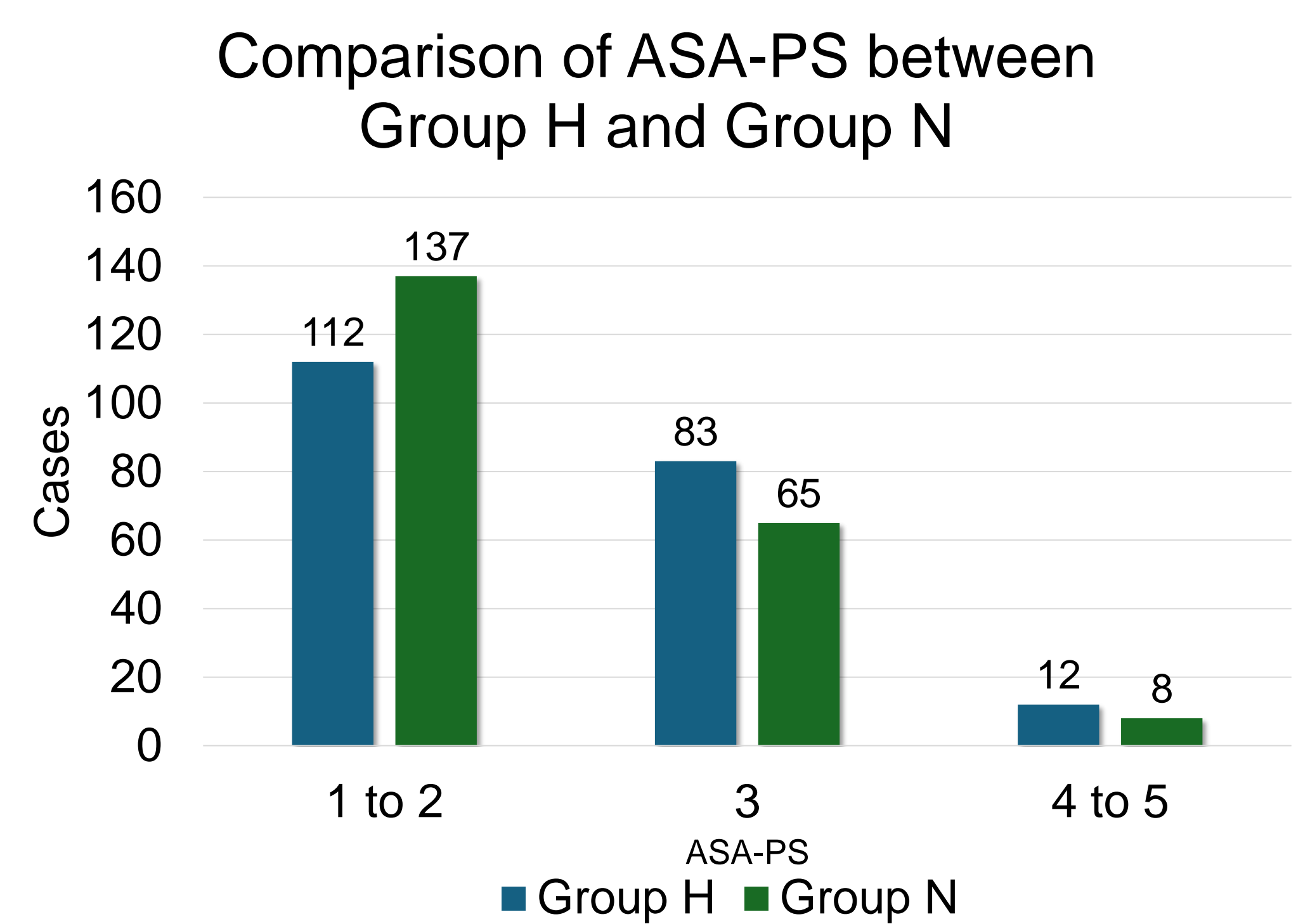
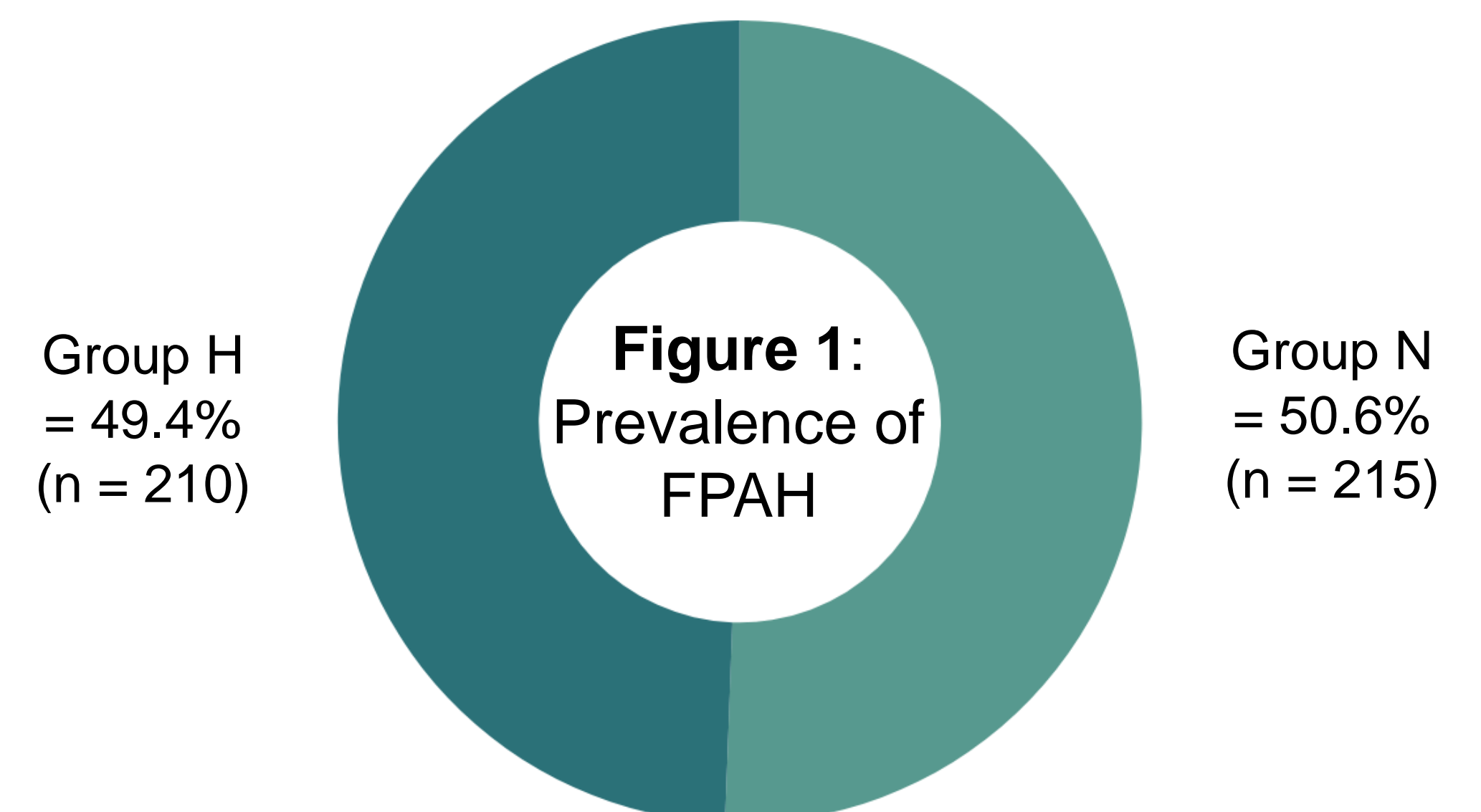


Figure 2: American Society of Anaesthesiologists' physical status (ASA-PS) of patients in group H and group N. P = 0.0014

Frequency of Administration of Interventions in Group H

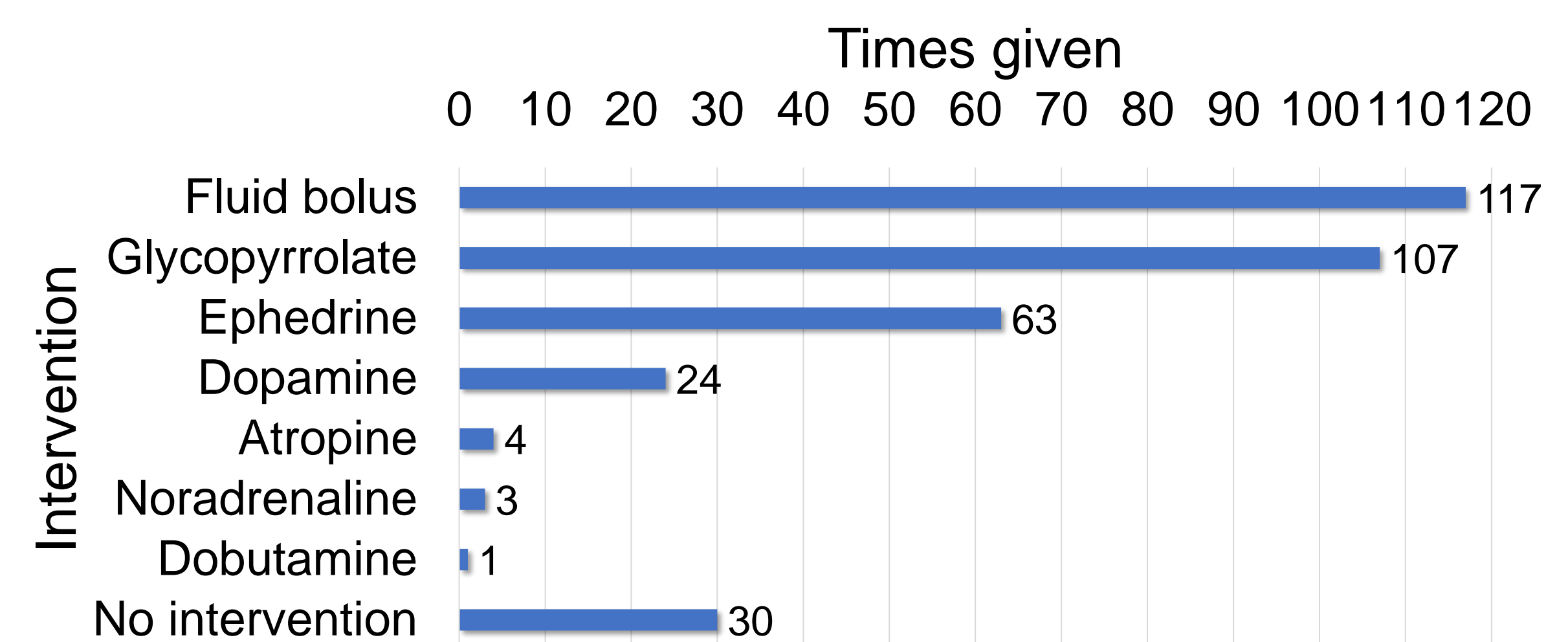


Figure 3: Frequency of administration of interventions in this study.

Percentage of Positive and Negative Ranks for each Intervention

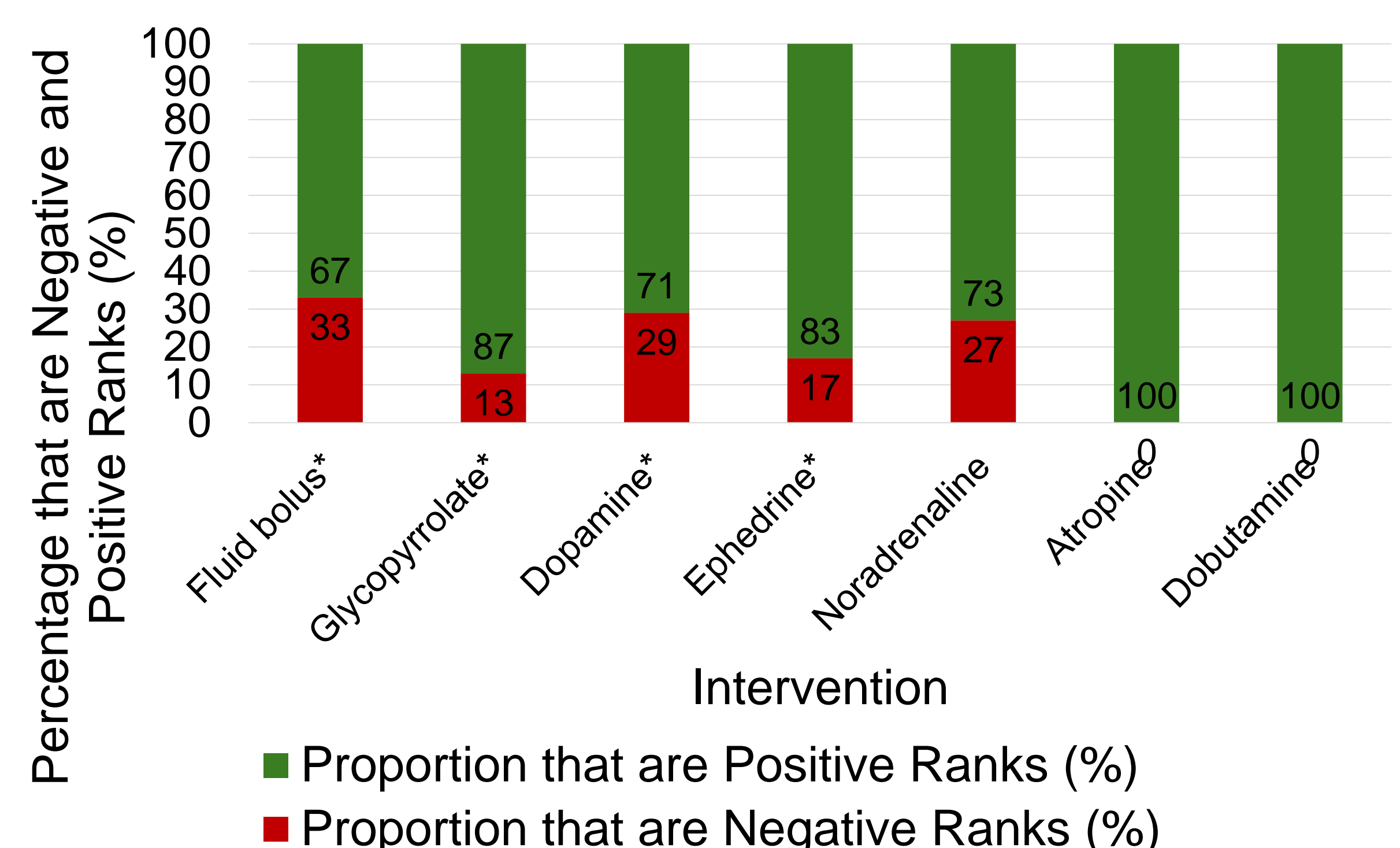


Figure 4: Frequency that are positive and negative ranks for impact on blood pressure post-intervention administration. * signifies P < 0.005