

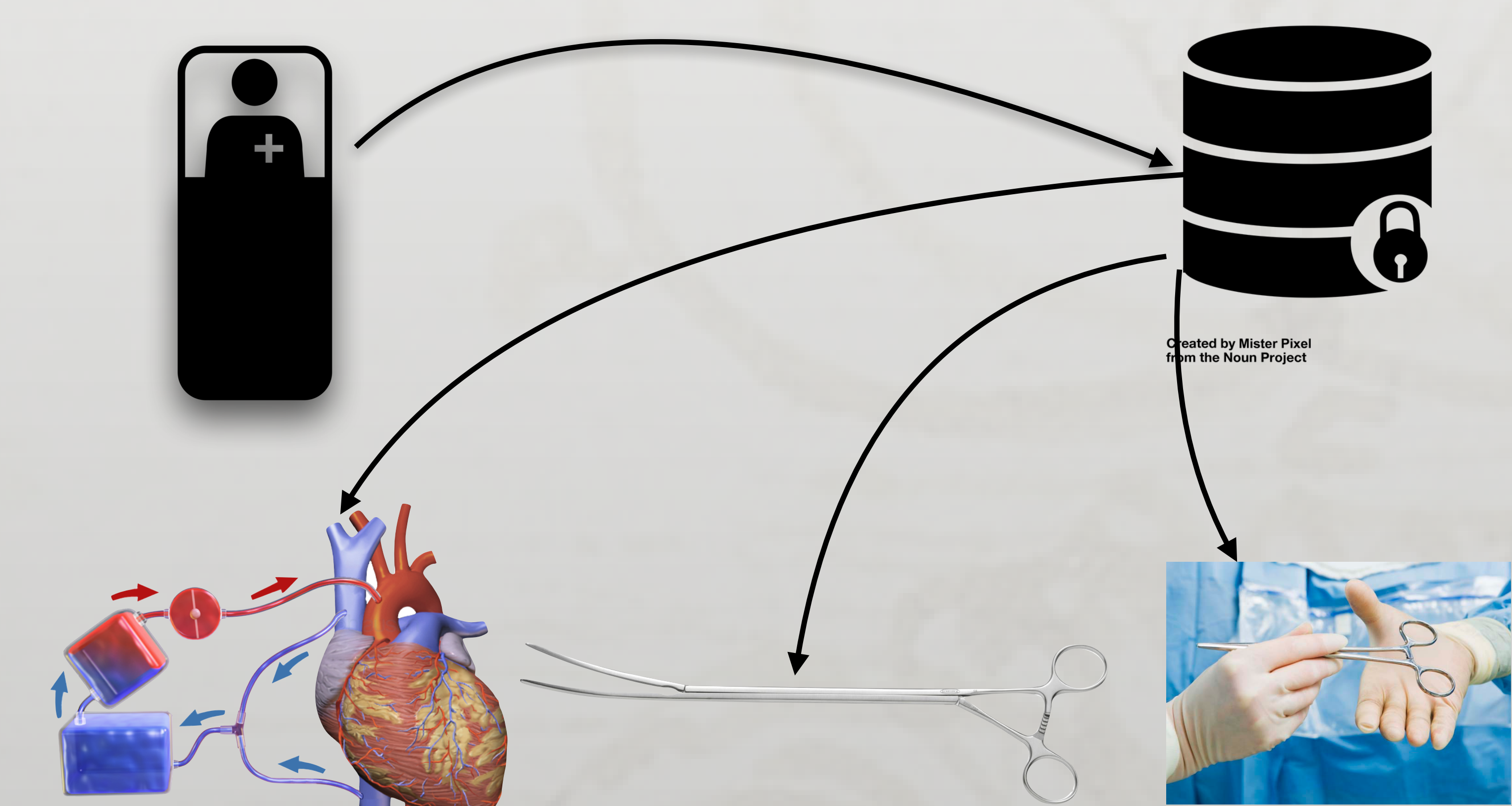
ENDOSCOPIC VERSUS DIRECT-VISION MITRAL REPAIR: A PROPENSITY SCORE ANALYSIS

R Margaryan, G Bianchi, M Solinas
Ospedale Del Cuore Fondazione 'G. Monasterio', Massa, Italy.

Introduction

Endoscopic (ENDS) and direct-vision (DIRV) mitral repair are well established, but differences in patient selection and outcomes are not well documented

Methods

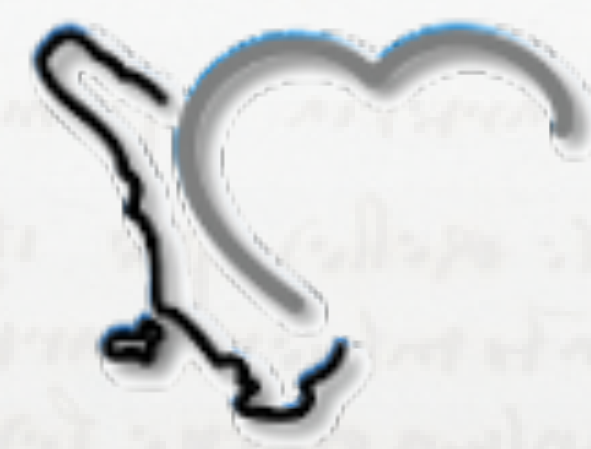


Study design and Participants

A retrospective analysis was performed on 525 ENDS and 597 DIRV mitral procedures at one institution from July 2015 to September 2022. ENDS patients had 4 cm nonrib spreading incisions with endoscopic guide, while DIRV patients had 6-8 cm rib spreading incisions without any thoracoscopic assistance. Propensity score analysis matched patients for differences in baseline characteristics.

Statistical methods and analysis

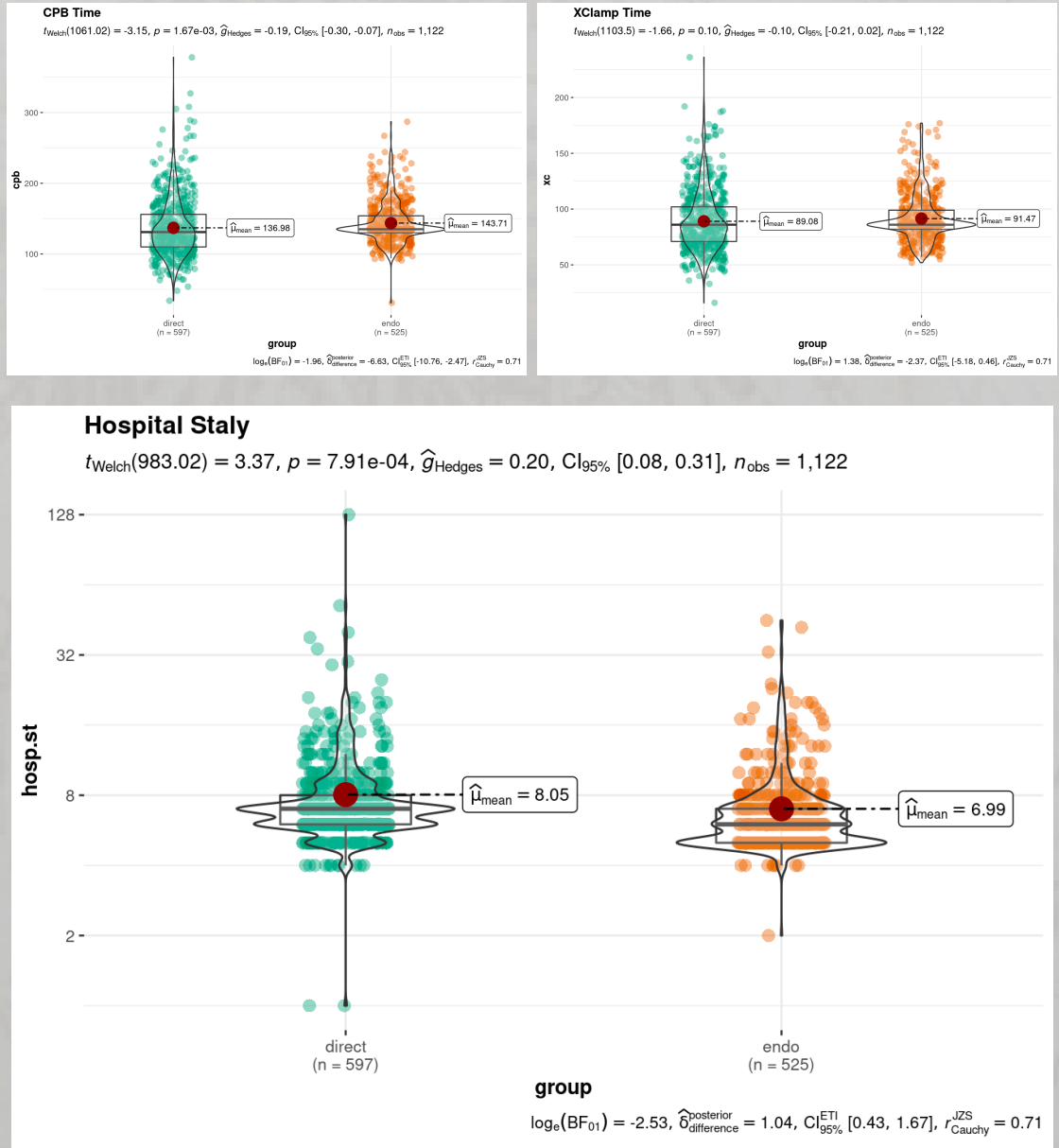
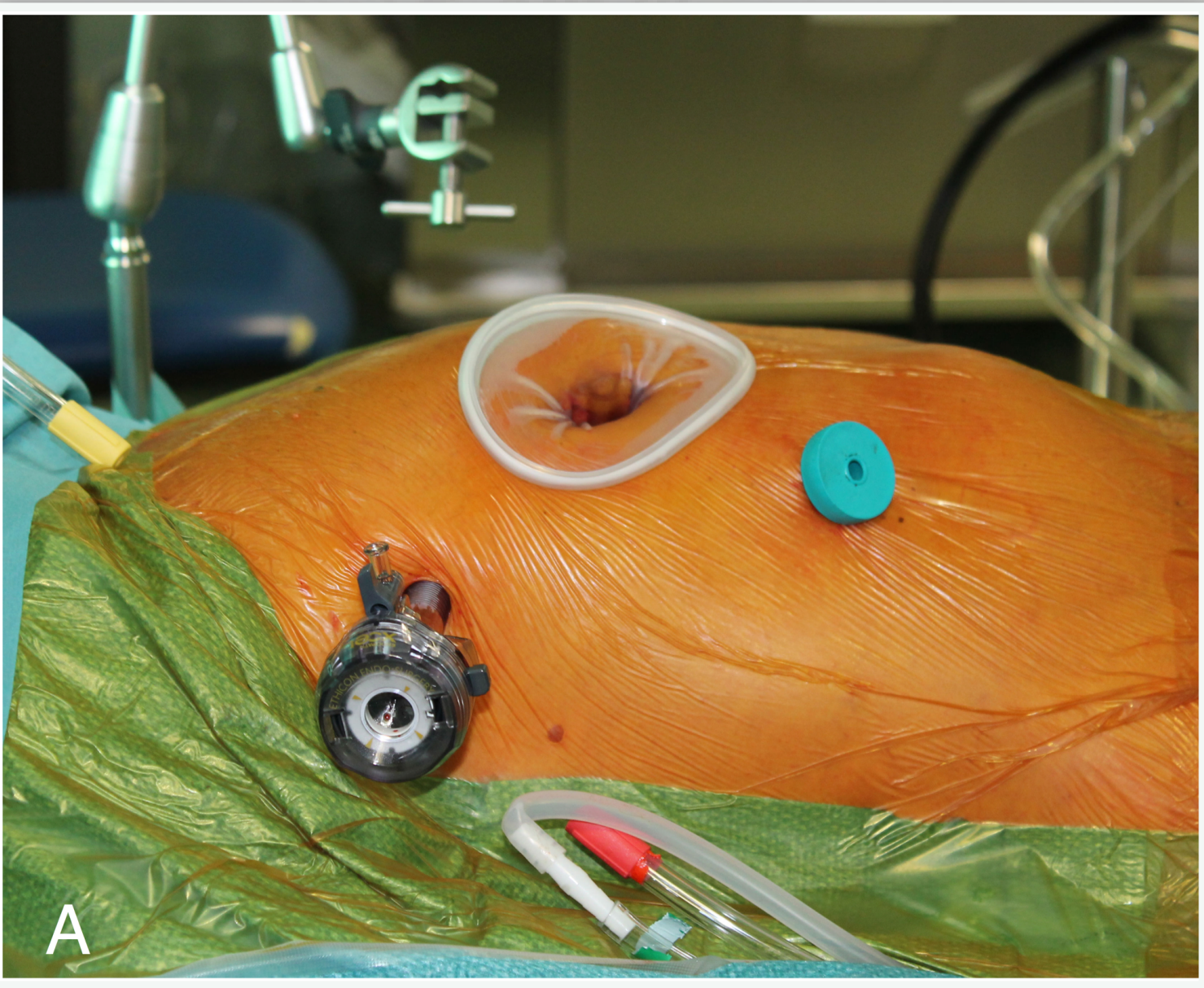
Continuers variables were presented as means and standard deviation, categorical variables as proportions. Two sided statistics were performed with a significance level of 0.05. For all analysis R Statistical Computing Environment[3] were used with RStudio (RStudio (2019). RStudio: Integrated development environment for R (Version 1.1) [Computer software]. Boston, MA. Retrieved May 1, 2019. Available from <http://www.rstudio.org/>)



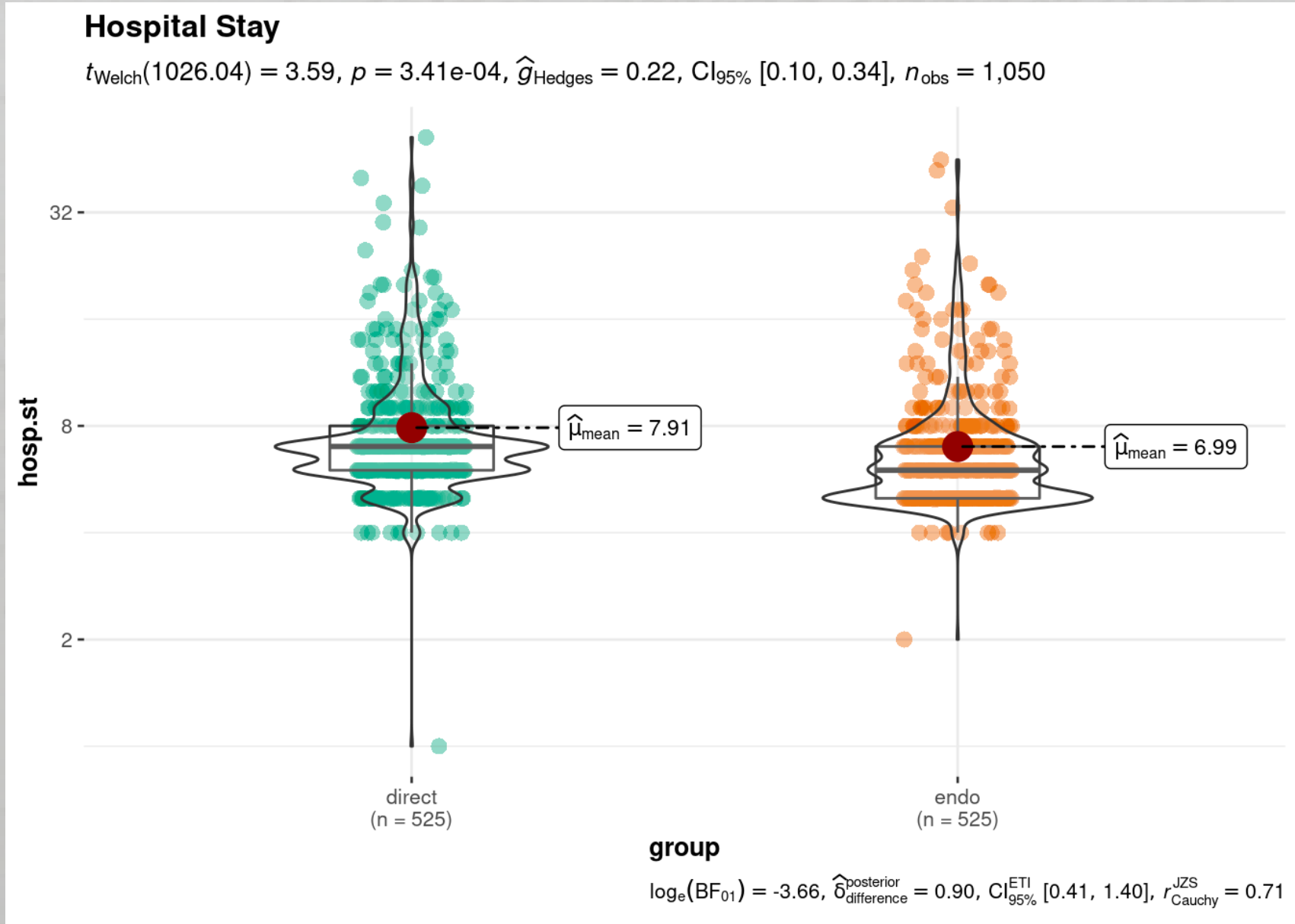
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Results

Results: Unmatched ENDS patients were younger (63.9 ± 10.3 vs. 68.4 ± 10.7 , $p < 0.01$), had a higher percentage of males (72% vs. 48%, $p < 0.01$) and had less NYHA Class 3-4 symptoms (13% vs. 28%, $p < 0.01$), less atrial brillation (12% vs. 23%, $p = .02$) and less tricuspid regurgitation (13% vs. 33%, $p = 0.01$). Pump time (143.7 ± 28.9 vs. 137.0 ± 42.0 , $p < 0.01$) and clamp time (91.5 ± 21.0 vs. 89.1 ± 27.0 , $p < 0.01$) were longer for ENDS patients. Postoperative stay, however, was shorter in ENDS (7.0 ± 3.8 vs. 8.0 ± 6.5 , $p = 0.009$). Repair rate was higher in ENDS patients (87 % vs. 58 %, $p < 0.01$). Overall mortality were comparable between groups (0.38 % vs 0.8 % , $p = 0.2$). Matched Propensity score analysis of matched patients showed that pump time (143.7 ± 28.9 vs. 136.6 ± 42.3 , $p = 0.008$) and clamp time (91.5 ± 21.0 vs. 89.4 ± 27.6 , $p = 0.238$) were longer for ENDS patients. Postoperative stay remained shorter in ENDS (7.0 ± 3.8 vs. 8.0 ± 6.5 , $p < 0.01$). Repair rate was higher in ENDS patients even after matching (83 % vs. 66 %, $p < 0.01$). However, postoperative morbidity, and 7-year survival ($96 \pm 1\%$ vs. $95 \pm 3\%$, $p = .7$) were not different. For matched patients with degenerative valve disease, 7-year incidence of mitral re- operation were comparable in both groups, severe mitral regurgitation (MR) ($6 \pm 4\%$ vs. $1 \pm 1\%$), or $\geq 2 +$ MR ($12 \pm 5\%$ vs. $12 \pm 4\%$), were not signicantly different between ENDS versus DIRV approaches.



Unmatched



Matched

Conclusions

In this study for 7 years of follow-up ENDS versus DIRV approach to mitral repair had higher repair rate, slightly longer pump and clamp times, but resulted less postoperative stay with higher repair rate. Peri-operative morbidity, 7-year survival and repair durability were otherwise similar.

References

1. Ho TK (1998). "The Random Subspace Method for Constructing Decision Forests" (PDF). IEEE Transactions on Pattern Analysis and Machine Intelligence. 20 (8): 832–844.
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