**Appendices – Supplementary Tables**

**Supplemental Table 1:** Supplemental statistical text describing the Lasso technique in detail.

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| **Supplemental statistical text** |
| The primary outcome, AHF, was used as the response variable in regression analyses.  |
| The least absolute shrinkage and selection operation (lasso) technique was performed based on calculating the optimal elastic net mixing parameter, alpha (1,2).  |
| To obtain the shrinkage penalty and tuning parameter, lambda, we chose a grid of lambda parameters and computed ten-fold cross-validation for each lambda value. We then selected the tuning parameter lambda for which the cross-validation error was within one standard error of the minimum (lambda.1se)(2).  |
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| We performed lasso regression in 60 different models. The 60 models were created by randomly dividing the 232 patients, using stratified sampling, into six different proportions of training-validation datasets (90%/10%, 80%/20%, 70%/30%, 66%/34%, 60%/40% and 50%/50%).  |
| This was repeated ten times for each proportion, using ten different seed of R's random number generator. Hence, 60 (6x10) different randomly selected datasets were used for training and validation. A lasso-regression model was applied to each of the 60 datasets, where each model found the most significant variables for the outcome AHF, and in sensitivity analyses the observer-independent AHF diagnosis. |
| *Refrences* |
| *1) Tibshirani R. Regression Shrinkage and Selection via the Lasso. J R Stat Soc Ser B‐Methodological, 58, 267–288 [Internet]. 1996;1–23. Available from: https://rss.onlinelibrary.wiley.com/doi/abs/10.1111/j.2517-6161.1996.tb02080.x* |
| *2) Hastie T, Tibshirani R, James G, Witten D. An Introduction to Statistical Learning, Springer Texts. Vol. 102, Springer Texts. 2006. 618 p.*  |