Indwelling urinary catheters:
on associations with prognosis in acute heart failure and confounding factors

Sondaje vesical, pronóstico de la insuficiencia cardiaca aguda y factores de confusión

To the editor:

I read with great interest the article on bladder catheterization of patients with acute heart failure (AHF) and its association with prognosis by Domínguez-Rodríguez et al.1 The authors include 991 patients hospitalized for AHF, with a surprisingly low mean age (66 years, when the mean age of these patients is around 80 years). The high percentage of women (71%) was also surprising. Bladder catheterization was performed in the hospital emergency department in 29% of patients. Univariate analyses showed a weak association of bladder catheterization with prognosis (no P value lower than .01). However, multivariate analysis showed an independent association with prognosis. The authors conclude that “routine” bladder catheter insertion is associated with worse clinical outcomes.

Regarding the multivariate analysis, the authors were “struck by the fact that there was so little relationship in the univariate analyses translated into an independent relationship in the multivariate analysis”. In the univariable analyses in our work, we found statistically significant differences in the primary event (consisting of death or 30-day readmission; logrank test with \( P = .01 \)), in-hospital mortality \( (P = .04) \), and urinary tract infection \( (P = .01) \). Likewise, in the multivariate analysis, differences were found in the primary event and in urinary tract infection, and even the differences in in-hospital mortality were lost (contrary to what was stated by the author in the letter).

In addition, the author expresses concern about not including some important variables such as age and recommends a propensity score-based analysis.2 According to the 10-event rule for each variable, we could include a maximum of 9 variables in our study.2 How these variables should be chosen is controversial and it may be sensible to include clinically important variables such as age, even if they are not statistically significant, especially when the sample is small. But we do not understand how age could produce a significant difference when the divergence in mean age between the two groups (with and without catheterization) is less than 1 year.

On the other hand, we do not understand how the analysis by propensity index would solve the problem since, in this case, it would be necessary to choose the variables that calculate this index.

Manuel Martínez-Sellés
Servicio de Cardiología, Hospital General Universitario Gregorio Marañón, CIBERCV. Universidad Europea. Universidad Complutense.
Madrid, Spain.
mmselles@secardiologia.es

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References