Letters to the Editor

Safety of Same-Day Discharge After Percutaneous Coronary Intervention

What Is the Level of Evidence?

We read with great interest the paper by Brayton et al. (1). This paper is nearly identical to our recent publication in JACC: Cardiovascular Interventions (2). It is interesting that 2 similar papers using the same data would be published in the JACC family of journals just a few months apart. Although Brayton and colleagues briefly acknowledge our paper in their discussion section, there are several aspects of their paper and claims regarding our paper that deserve comment.

1. Table 1 in the paper by Brayton et al. lists a study by Chung et al. (3) as a randomized trial. We ask that they carefully review this study again because it is clearly stated in the paper that it is a prospective, nonrandomized study. We included this study in our meta-analysis appropriately as an observational study (reference 15).

2. Brayton and colleagues claim that their study differs from ours partly because they included 1 randomized trial that we did not. It appears that they are referring to a study by Glaser et al. (4) that randomized 39 patients. We concede that this was an oversight on our part, but given that we examined data from >111,000 patients, its inclusion would not have affected our results.

3. They also claim that they included 23 observational studies that we did not. We rejected these from our analysis because none of these studies included a comparator group who stayed overnight after a percutaneous coronary intervention. Including these studies does not conform to “best practice” for meta-analyses as described by the MOOSE (Meta-analysis Of Observational Studies in Epidemiology) group (5). Moreover, Brayton et al. (1) only present the mean value of outcomes among patients discharged the same day. No tables, forest plots, or comparisons with overnight stay are presented. This, too, violates meta-analytic best practice and cannot be used to support the safety of same-day discharge.

4. We are concerned that Brayton and colleagues chose the cumulative incidence of “death, MI, and TLR” as primary outcomes in their meta-analysis as target lesion revascularization was not reported in many of the included studies. Most studies reported “repeat PCI or revascularization,” which appears more clinically and cost relevant.

5. Although Brayton et al. (1) come to similar conclusions as we did, we believe that they have overstated their findings. Our conclusions were appropriately cautious considering the large heterogeneity of data and definitions used. This latter point is not discussed by Brayton et al. (1) at all. We also repeated our analysis using Bayesian techniques (data not shown), and the available evidence is practically inconclusive given the wide credible confidence intervals around the point estimates for outcomes. In contrast, Brayton et al. (1) conclude that same-day discharge is “as safe” as overnight observation. Although we agree with this on clinical grounds in selected patients, it is a clear overstatement of the data on statistical grounds.

6. On their last page of discussion, they claim that their study has a “significant methodological difference from [our study], which included patients not discharged as a post hoc ‘control arm.’” It is not at all clear what this means because, by definition, all analyses of observational data are necessarily post hoc.

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What Is the Level of Evidence?

In their letter, although Dr. Bertrand and colleagues raise a number of points, their key concern appears to relate to the publication of 2 similar papers a few months apart. Our group was completely unaware of the meta-analysis by Abdelaal et al. (1) until our paper was already in revision at which point we added a brief discussion of their paper to our revised paper (2). We fully acknowledge that the 2 papers are similar in content and conclusions and find it reassuring that 2 different groups working entirely independently, and with some differences in methodology, reached very similar conclusions. We believe that replication and validation remain essential steps in the scientific process, particularly for studies such as these that have direct clinical implications.

To specifically address the first of the numbered critiques in their letter, the paper by Chung et al. (3) clearly states in its Methods section that: “Patients who had fulfilled the enrollment criteria were randomly allocated to one of two groups: group A (same-day discharge) and group B (routine admission for close observation).” We acknowledge that the presentation of study results in the Chung et al. (3) paper is contradictory to this statement, however.

With regard to the issue of which observational studies were included in the 2 meta-analyses (point 3), our approach to the observational studies was markedly different from that of Abdelaal et al. (1) which led to different criteria for study selection. Because of our concerns about the validity of comparisons of non-randomized study groups, we did not report any comparisons of outcomes between same-day discharge and overnight observation in the observational studies, but rather used the observational studies only to report pooled “real-world” absolute event rates among those actually discharged on the day of the percutaneous coronary intervention. This strategy avoids the substantial methodological weakness of observational comparisons but does allow the observational data to be used to estimate aggregate event rates. We continue to maintain that this is a methodological strength of our paper relative to that of Abdelaal et al. (1)

Finally, we agree with Dr. Bertrand and colleagues that it would be an overstatement to say, on the basis of either of our studies, that same-day discharge is “as safe” as overnight observation. Rather, as we stated in our original conclusions, larger, randomized studies of same-day discharge are needed to definitively establish its safety compared with overnight observation. In the meantime, the aggregate data from both meta-analyses support consideration of the practice in carefully selected patients.

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