



Letter to the Editor

Letter to the Editor: Not the Last Word: Safety Alert: One in 200 Knee Replacement Patients Die Within 90 Days of Surgery

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To the Editor,

We enjoyed reading the column by Dr. Bernstein [1], but we believe knee replacement is considerably safer than suggested by the author.

Three large cohort studies were used to estimate a 90-day mortality of 0.6% (2559 total deaths among 428,574 patients), or one in 200, as suggested in the title. Crucially, the author omitted the time period of data collection for his calculation. Katz and colleagues [6] reported mortality among Medicare beneficiaries using

data collected during an 8-month period in 2000. Mahomed and colleagues [8] also studied Medicare beneficiaries receiving TKA during the year 2000 [8]. SooHoo and colleagues [11] studied patients receiving TKA in California from 1991 to 2001. Dr. Bernstein's "back-of-the-envelope meta-analysis" estimate of mortality, therefore, pertains to data collected exclusively prior to 2001.

A considerable temporal decline in mortality after TKA has been demonstrated within other large cohort studies of mortality after TKA. Sing and colleagues [10] used data from the Mayo clinic registry of 12,484 TKAs to show that 90-day mortality fell from 0.62% in the period 1994 to 1996, to 0.31% in the period 2006 to 2008. Hunt and colleagues [4] also observed a reduction in 45-day mortality from 0.37% in 2003, to 0.20% in 2011 in a

registry study of 467,779 total knee replacements, even after adjusting for small differences in age and gender during the time period of observation [4]. A smaller study by Huddleston and colleagues [3] (including 2033 TKAs) identified a nonsignificant trend towards declining 30-day mortality from 0.44% in 2002 to 0.17% in 2004.

As a result of these temporal trends, contemporary studies of 90-day mortality following TKA report rates in the range 0.14% to 0.31% [2, 5, 7, 12]. It appears, therefore, that a more accurate estimate of 90-day mortality is approximately 0.2% or one in 500.

Some of the observed mortality in this elderly population is unrelated to surgery. The work of Parry and colleagues [9] illustrates this point. Parry and his team studied the 90-day mortality of patients on the waiting list for TKA, and compared this with mortality in the 90 days following surgery. The odds of mortality doubled post-operatively. Extrapolation would suggest that the current additional risk of 90-day mortality posed by TKA surgery alone (ignoring the risk of mortality due to unrelated causes) is in the region of 0.13% or one death in 750 TKAs, with other causes

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accounting for 0.07% (one death in 1428 cases).

We agree wholeheartedly with the sentiments of the piece—patients must be fully informed and cognizant of the risks they face when undergoing procedures, particularly elective procedures such as TKA. Providing patients with accurate and reliable information from contemporaneous data represents the cornerstone of informed consent.

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