

Effects of IMPACT Program on Mortality among Incident Hemodialysis Patients

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INTRODUCTION

Objective: To analyze mortality among hemodialysis patients in an incident patient management program.

The IMPACT (Incident Management of Patients, Actions Centered on Treatment) program was initiated by DaVita® in October 2007. It aims to reduce mortality among patients during the first 3 months of dialysis, when they are especially vulnerable. IMPACT standardizes the on-boarding process by using:

- (1) A structured intake process for new patients
- (2) 90-day patient education program
- (3) 90-day patient management pathway
- (4) Data monitoring reports

METHODOLOGY

- This was an observational, balanced cohort study of mortality among IMPACT patients at 44 facilities and an equal size, randomized set of non-IMPACT (control) patients at 58 DaVita dialysis facilities.
- Incident patients were evaluated for up to 1 year from their first day of DaVita dialysis.
- The mortality rate was reported per quarter, and cumulative mortality was reported over 4 quarters.
- Two methods were used to analyze mortality:
 1. Constant sample size maintained over time; includes only patients with a complete record of survival or death over 1 year (IMPACT n=416; non-IMPACT n=416).
 2. Time-at-risk calculation; includes all new-to-dialysis patients with at least 1 day of treatment during the 1-year period (IMPACT n=731; non-IMPACT n = 731).

RESULTS

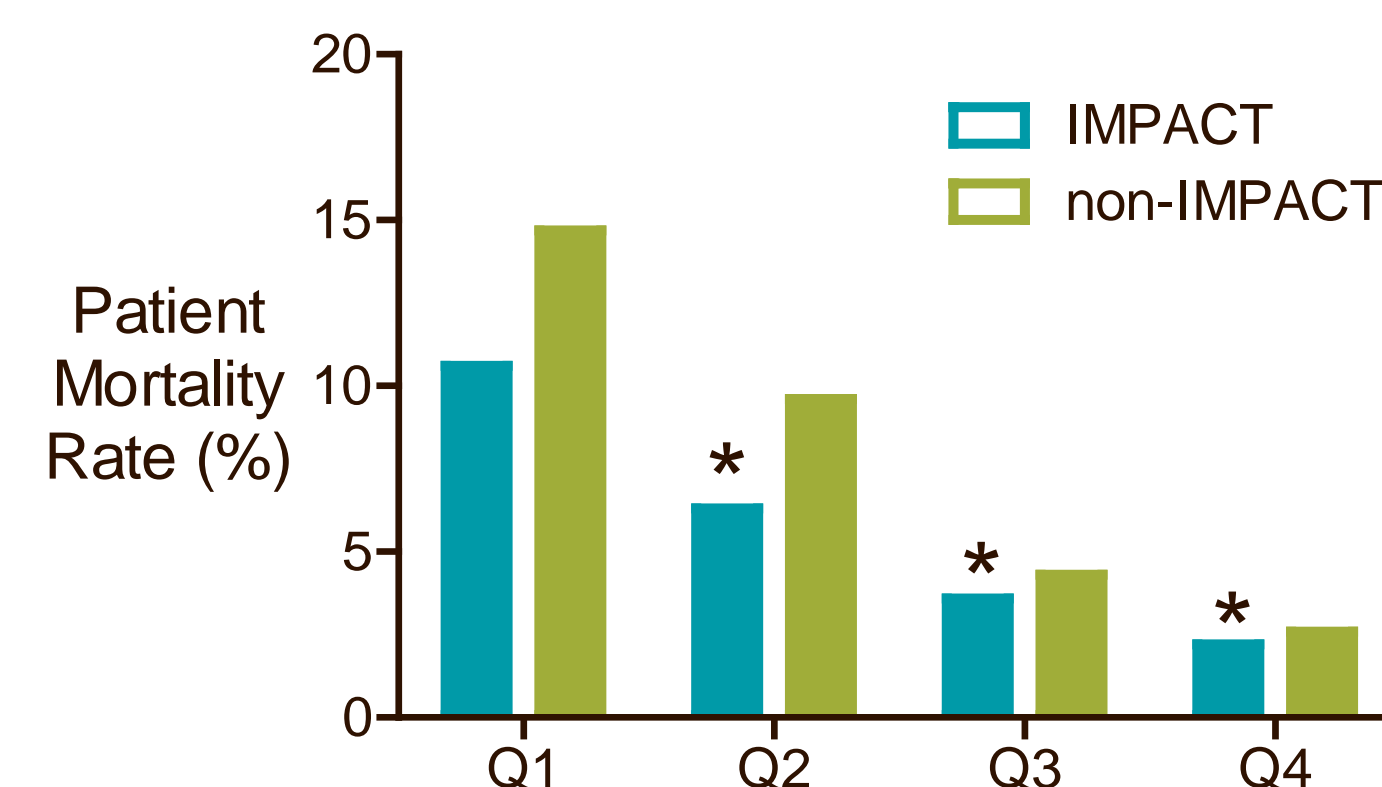


Figure 1. Quarterly mortality rate. Mortality rate was calculated using constant sample size (Method 1; * $p < 0.05$ IMPACT compared to non-IMPACT patients).

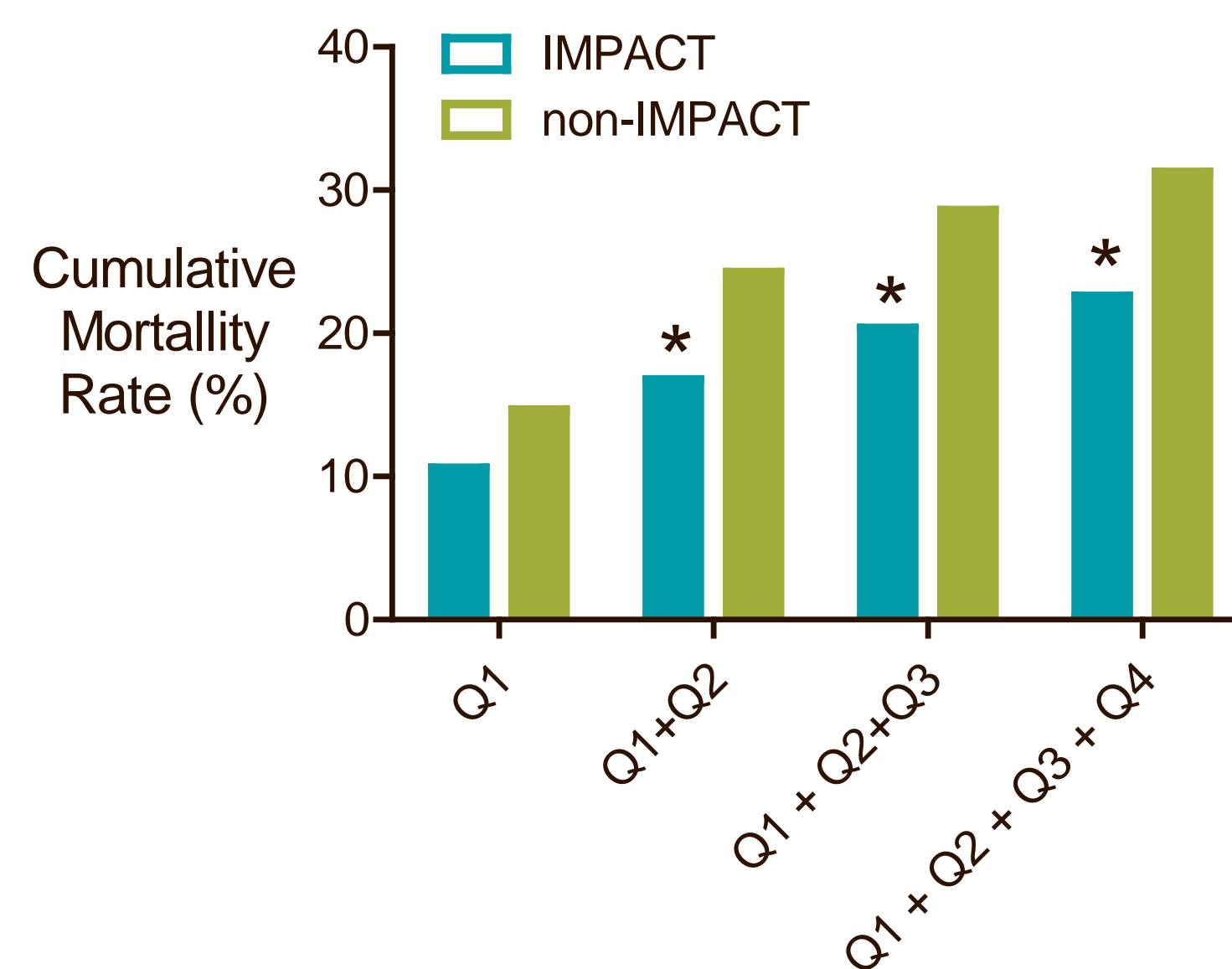


Figure 2. Cumulative mortality rate. Mortality rate was calculated using constant sample size (Method 1; * $p < 0.05$).

Table 1. Quarterly Deaths per 1000 Patient Years-at-Risk (Time-at-Risk; Method 2)

Quarter	IMPACT	Non-IMPACT
Q1	260	284
Q2	176	154
Q3	113	131
Q4	88	114

Table 2. Cumulative Deaths per 1000 Patient Years-at-Risk (Time-at-Risk; Method 2)

Quarter	IMPACT	Non-IMPACT
Q1	260	284
Q1+Q2	144	146
Q1+Q2+Q3	91	94
Q1+Q2+Q3+Q4	63	67

Note: Risk-based mortality is calculated from summary data, so statistical analysis was not possible for Method 2.

CONCLUSIONS

- Using Method 1 (constant sample size), mortality was significantly lower in IMPACT patients than in non-IMPACT patients from Q2 through Q4 (Figure 1).
 - Mortality declined rapidly and consistently over each quarter.
 - Cumulative mortality was also significantly lower among IMPACT patients than among non-IMPACT patients, as early as Q2 and continuing to the end of Q4 (Figure 2).
- By Method 2 (time-at-risk), there was a similar trend toward lower mortality among IMPACT patients compared to non-IMPACT patients in the latter half of the year, in both the per-quarter and cumulative analyses (Tables 1 and 2).

KEY LEARNINGS

- ✓ IMPACT reduced mortality among incident hemodialysis patients. Mortality improvement for IMPACT patients still continued to make significant drops in Q4, when the non-IMPACT mortality rates were flattening.
- ✓ The benefit of IMPACT is likely to result from focused patient management, especially in placing arteriovenous fistula access, at facilities using the IMPACT program.

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