Effect of IMPACT Program on Clinical Indicators of Incident Hemodialysis Patients

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INTRODUCTION

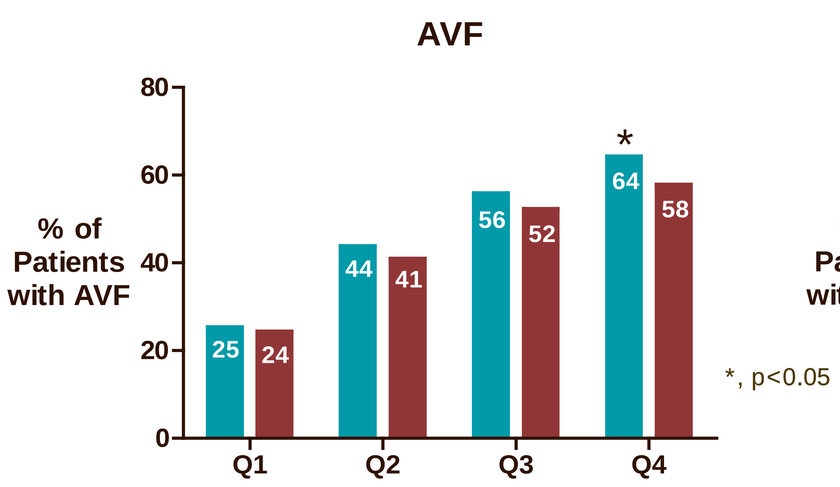
The objective of this study was to evaluate lasting results of the IMPACT™ (Incident Management of Patients, Actions Centered on Treatment) program in reducing incident patient mortality. The program started in October 2007 and standardizes the on-boarding process for intake, education, and management of incident patients during the 0- to 90-day period when they are most vulnerable. The program was initially piloted to 44 dialysis facilities and has now been expanded to all 1527 DaVita facilities.

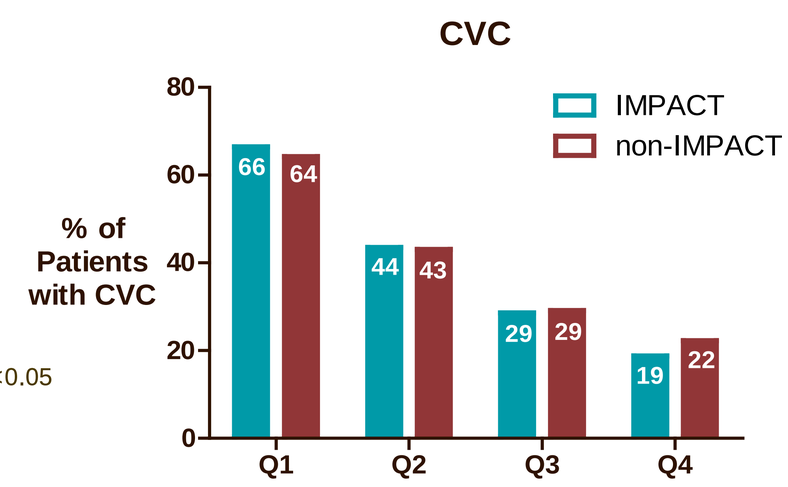
The objective of this study was to analyze the primary patient outcomes (morbidity and mortality), arteriovenous (AVF) access, and serum albumin of IMPACT patients vs. non-IMPACT patients from the end of their incident period up through the end of their first year of dialysis.

METHODS

- This observational study of a systematized quality improvement effort evaluated the IMPACT cohort in comparison to non-IMPACT patients at the 90-day time point and extends to 365-days (Year 1).
- The study time period is from October 2007 to December 2009.
- Mortality rate is reported per quarter and cumulative mortality over 4 quarters.
- Method 1 analysis maintained a constant sample size over time and includes patients with a complete record of survival or death over 1 year.
- Method 2 analysis calculated time-at-risk-based mortality, in which all new to dialysis patients were included if they had at least 1 day of treatment during the 1-year period.

RESULTS





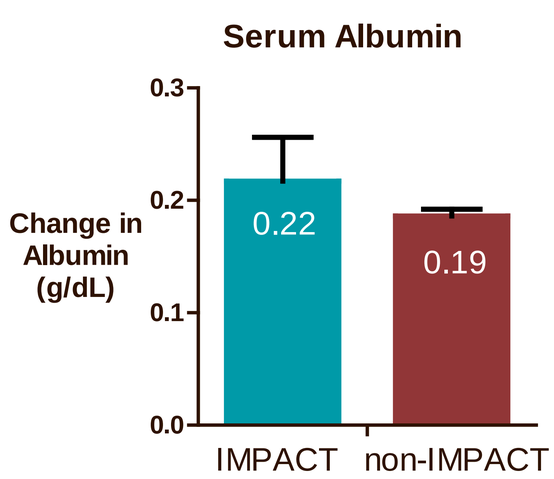


Figure 1. The Percent of Patients with AVF or CVC throughout the First Year of Dialysis

Figure 2. Change in Serum Albumin between Day 90 and Year 1

- By the end of Year 1, significantly more IMPACT patients have AVF than non-IMPACT patients (64% vs. 58%, p<0.05; Figure 1).
- IMPACT patients experienced a 0.22 g/dL increase in albumin compared to 0.18 g/dL in non-IMPACT patients (Figure 2).
- Method 1 mortality results were significantly lower in IMPACT patients (N=417) per individual quarter compared to the non-IMPACT patients (N=12,855; P=0.095 for Q1-3, P 0.05 for Q4), and mortality declined rapidly and consistently each quarter.
- By Method 2, there was a similar trend toward lower mortality among IMPACT patients (N=732) compared to non-IMPACT patients (N=30,542) in the latter half of the year, in both the per-quarter and cumulative analyses.

CONCLUSIONS

- Early study results showed that IMPACT patients experienced increased fistula access compared to non-IMPACT patients by Q2 (43.8% vs. 40.9%; Figure 1).
- By the end of Year 1, IMPACT patients had increased fistula access compared to non-IMPACT patients (64.2% vs. 57.7%, p<0.05) and fewer CVCs (18.8% of IMPACT patients compared to 22.3% of non-IMPACT patients, NS).
- IMPACT patients had a larger (but non-significant) improvement in serum albumin levels from day 90 to Year 1 compared to non-IMPACT patients (Figure 2).
- The IMPACT program previously demonstrated lowered mortality among incident hemodialysis patients which will be tested with this extended time study.

KEY LEARNINGS

✓ Early findings have shown that better management of incident patients through the IMPACT program was associated with more patients having AV fistula access thus reducing the patients' risk of infection and other catheter-related hospitalizations.

✓ This benefit is likely a result from focused patient management, especially in placing fistula access, at facilities using the IMPACT program.

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