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Study Stats

Use of interrupted time-series analyses in evaluating health economic outcomes following implementation of multilayer water-tight wound closure (MLWC) in a primary total joint arthroplasty (TJA) population

Tan Z, Etter K, Tomaszewski J, Chen BP, Gunja N. J&J MedTech, Raritan, NJ, USA.

Can hospitals improve economic efficiency without compromising outcomes in TJA by using STRATAFIX™ Knotless Tissue Control Device and DERMABOND™ PRINEO™ Skin Closure System for MLWC vs conventional sutures and staples?

A retrospective, observational, cohort study using interrupted time series (ITS) analyses compared clinical and economic outcomes of conventional closure (CC) vs MLWC with STRATAFIX™ Knotless Tissue Control Devices and DERMABOND™ PRINEO™ Skin Closure System in TJA

CONCLUSION[1]

This retrospective observational study of 2167 TJA patients showed MLWC was associated with **≥40% reduction in 90-day readmission, length of stay (LOS), and discharge to a skilled facility** compared to conventional closure.

METHODS[1]

Patient selection

2167 patients were identified as undergoing TJA from a single surgeon at a US hospital

CC Cohort

- 906 TJA patients from 2011 through 2013 were included
- Patients were closed with Coated VICRYL™ (polyglactin 910) Sutures and conventional staples

MLWC Cohort

- 1261 TJA patients from 2015 to 2020 were included
- Patients were closed with STRATAFIX™ and DERMABOND™ PRINEO™

Outcomes

Primary outcome
90-day readmission rate

Secondary outcomes
LOS, discharge status, operating room (OR) time, 90-day emergency department (ED) visit rate, and 90-day complications rate

Analysis

- Descriptive analyses were performed comparing the MLWC and CC cohorts on baseline characteristics as well as on the clinical outcomes of interest
- Adjusted interrupted time series (ITS) analyses were conducted to account for decreasing trends in LOS and shift in discharge status over the study period

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Reimagining how we heal™

Multi-layer water-tight wound closure (MLWC) Cohort

STRATAFIX™ Knotless Tissue Control Devices and DERMABOND™ PRINEO™ Skin Closure System

n=1261

vs

Conventional closure (CC) Cohort

Coated VICRYL™ (polyglactin 910) Sutures and staples

n=906

OBJECTIVE[1]

To compare clinical and economic outcomes after TJA when implementing multilayer watertight closure (MLWC) using STRATAFIX™ and DERMABOND™ PRINEO™ vs conventional closure (CC) with VICRYL™ sutures and staples

RESULTS[1]

Compared to patients in the CC cohort, the MLWC cohort (STRATAFIX™ and DERMABOND™ PRINEO™) was associated with the following:

IMPROVEMENTS	
60% lower 90-day readmission rates (1.5% vs 3.8%, *P*<0.05)	**44% lower LOS** (1.4 days vs 2.5 days, *P*<0.05)
40% lower discharge rates to a skilled care facility (8.5% vs 14.1%, *P*<0.05)	
SIMILAR RESULTS	
Results were statistically similar for OR time and ED visits	

Interrupted Time Series (ITS) Results

A sharp decline in LOS (0.9 days) and incidence of discharge status to a skilled care facility (5.6%) were seen after the implementation of MLWC

TAKEAWAY[1]

MLWC with STRATAFIX™ and DERMABOND™ PRINEO™ may facilitate shorter LOS and the ability to discharge to home vs a skilled nursing facility compared to CC

- MLWC compared to a CC approach in a TJA cohort was associated with **60% reduction in readmissions, 44% reduction in LOS, and 40% lower discharge to a skilled care facility**
- ITS analyses showed a **sharp decline in LOS and discharge status to a skilled nursing facility immediately after implementation of MLWC**, confirming the important impact of this wound closure approach

For complete indications, contraindications, warnings, precautions, and adverse reactions, please reference full package insert.

Reference: 1. Tan Z, Etter K, Tomaszewski J, Chen BPH, Gunja N. Use of Interrupted Time-Series Analyses in Evaluating Health Economic Outcomes Following Implementation of Multilayer Water-Tight Wound Closure in a Primary Total Joint Arthroplasty Population. J&J MedTech, Raritan, NC, USA.

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