

Study Summary

The clinical and economic value of triclosan-coated surgical sutures in abdominal surgery

Ceresoli M, Carissimi F, Piemontese A et al. Appl Sci. 2020;10(3):1090.

Conclusion

The use of triclosan-coated sutures results in significant and robust cost savings, according to the economic cost model developed in this study. Triclosan-coated sutures should be considered for wound closure as a cost-saving measure to prevent SSIs

Study Aim

To appraise the evidence for surgical site infection (SSI) reduction with triclosan-coated suture (TCS) vs non-coated suture (NCS) in abdominal surgery, and estimate the overall economic impact of TCS in these procedures.

Methods

- A Budget Impact Analysis (BIA) modelled patients undergoing abdominal surgery in an Italian hospital setting with wound closure using TCS vs NCS
- Evidence for the model was extracted from systematic literature reviews (SLRs), meta-analyses, randomised controlled trials (RCTs) and expert opinions

Primary Endpoints:

- Potential net cost savings in abdominal surgery achieved through SSI reduction as a result of converting to TCS from NCS



Data for the key driver in the model was identified through SLRs and meta-analyses which reflect the highest level of evidence to inform a model



The primary, scenario and sensitivity analysis was conducted from an Italian hospital perspective with a time frame of one year



Results

A recent meta-analysis investigating the role of TCS in abdominal surgery was used to inform the model.¹

▼ **30%** Reduction in SSI risk when using TCS versus NCS¹

The BIA model inputs were as follows:

6 sutures per procedure*

+€1 extra per TCS versus NCS[†]

€4,838 per SSI^{2‡}

86% prolonged hospital stay^{2‡} **14%** increased resource use^{2‡}

*Expert opinion; [†]Model assumption; [‡]Cited within a published Italian study.

Based on these inputs, the model found that:

Over **100** abdominal procedures

€14,785 was saved with a €600 investment in TCS

0.1 avoided SSI cases balanced the investment cost of TCS

By modelling a variety of different scenarios, it was found that:

- Even when the risk of SSI was **very low** (2%), there were still **cost savings** over 100 procedures when using TCS versus NCS
- The **frequency of SSI** and the rate of **SSI reduction** were the biggest cost drivers overall
- There was a **98% chance** that there will be **cost savings** when using TCS versus NCS



Additions

These findings were determined in an Italian setting using Italian SSI rates and SSI costs, but may be generalisable to other countries' health care systems.

References: 1. Henriksen NA, Deerenberg EB, Venclauskas L, et al. Hernia 2017;21:833–841; 2. Gianotti L, Braga M, Frei A, et al. Shock 2000;14:325–330.