

3M Infection Prevention Solutions



Published Clinical Studies Common Topical Antiseptics



3M Infection Prevention Solutions

Innovation
On A Mission™



Interpreting Clinical Evidence for your Practice

Many studies are often presented to clinicians as ways to evaluate process improvement and product selection. With the time constraints you have and the vast amounts of information coming into your office, here are some key questions and considerations to keep in mind before reading any study:

- 1) If you are considering Operating Room products, it is best to reference studies conducted in the operating room (study environment is relevant).
- 2) Is the primary outcome a meaningful endpoint (i.e. Surgical Site infections versus bacterial counts)?
- 3) Is the study a controlled study whereby only one variable is changed? Or does it contain multiple interventions?
- 4) Are the treatment interventions comparable? Or are some obviously superior?
- 5) Is the journal a reputable peer review journal?
- 6) Check to ensure you know which products are being compared in each study; generic names can be confusing.
- 7) If you choose to make a change in your process or products based upon a study, make sure you understand your infection rates before, during the transition, and after implementation. Often, changes are made in the operating room but long-term implications of the change are unknown.

Introduction

Clinical evidence is becoming more and more important in your product and process decisions.

As manufacturers build clinical evidence for their products, it is important for you to consider how the studies were conducted, and which studies you may consider in your value analysis efforts.

This brochure contains information related to published clinical studies of surgical skin preparations. It does not include any clinical information from manufacturers that may be in the form of abstracts, white papers, or marketing publications. Published studies provide details essential for the clinician to evaluate the relevance of the data. Other types of clinical evidence (i.e. white papers, etc.) do not usually provide enough background to understand how the data were achieved.

Published Clinical Studies of Common Topical Antiseptic Products

Antiseptic Prep Related Publications	Author	Journal
Chlorhexidine-Alcohol versus Povidone-Iodine for Surgical-Site Antisepsis	Darouiche et al	New England Journal of Medicine, Jan 2010
Effects of Preoperative Skin Preparation on Postoperative Wound Infection Rates: A Prospective Study of 3 Skin Preparation Protocols	Swenson et al	Infection Control & Hospital Epidemiology, Oct 2009
Preoperative Skin Preparation of Cardiac Patients	Segal et al	Association of Operating Room Nurses Journal, Nov 2002
Skin Preparations in CABG Surgery: A Prospective Randomized Trial	Roberts et al	Complications in Surgery, Nov/Dec 1995
Efficacy of Surgical Preparation Solutions in Shoulder Surgery	Saltzman et al	Journal of Bone and Joint Surgery, Aug 2009
Efficacy of Surgical Preparation Solutions in Foot and Ankle Surgery	Ostrander et al	Journal of Bone and Joint Surgery, May 2005
Prevention of Wound Contamination Using DuraPrep™ Solution* Plus 3M™ Ioban™ 2 Antimicrobial Incise Drapes	Jacobson et al	Clinical Orthopaedics and Related Research, Oct 2005
Comparison of Povidone Iodine and DuraPrep, an Iodophor-in-Isopropyl Alcohol Solution, for Skin Disinfection Prior to Epidural Catheter Insertion in Parturients	Birnbach et al	Anesthesiology, Jan 2003

* 3M™ DuraPrep™ Surgical Solution

(Iodine Povacrylex [0.7% available iodine] and Isopropyl Alcohol, 74% w/w) Patient Preoperative Skin Preparation

** Isopropyl Alcohol

Preps Studied	Primary Outcome	Other Interventions?	Hospital	Healthy Subjects/ Long Term Care
CHG with IPA and Tincture of Iodine (both show low rates)	Blood culture contamination	Unknown	X	
CHG with IPA or Tincture of Iodine (equal rates)	Blood culture contamination	Unknown	X	
DuraPrep solution* vs. ChloroPrep	Bacterial skin counts	Unknown		X
CHG with IPA, or IPA, or 2% CHG or 4% CHG, or aqueous povidone-iodine	Bacterial skin counts	Unknown		X
CHG with IPA, or IPA, or 2% CHG	Bacterial skin counts	Unknown		X
CHG with IPA, or IPA	Venous catheter colonization	Unknown	X	

Published Clinical Studies of Common Topical Antiseptic Products (*cont.*)

Antiseptic Prep Related Publications	Author	Journal
Skin Antisepsis Kits Containing Alcohol and Chlorhexidine Gluconate or Tincture of Iodine are Associated with Low Rates of Blood Culture Contamination	Trautner et al	Infection Control & Hospital Epidemiology, Jul 2002
Comparison of Chlorhexidine and Tincture of Iodine for Skin Antisepsis in Preparation for Blood Sample Collection	Barenfanger et al	Journal of Clinical Microbiology, May 2004
Resistance of Antimicrobial Skin Preparations to Saline Rinse Using a Seeded Bacteria Model	Stahl et al	American Journal of Infection Control, Aug 2007
Analyses Comparing the Antimicrobial Activity and Safety of Current Antiseptic Agents: A Review	Hibbard	Journal of Infusion Nursing, May/June 2005
A Clinical Study Comparing the Skin Antisepsis and Safety of ChloraPrep, 70% IPA, and 2% aqueous CHG	Hibbard et al	Journal of Infusion Nursing, Jul/Aug 2002
Efficacy of Adding 2% CHG to 70% IPA for Skin Disinfection Prior to Peripheral Venous Cannulation	Small et al	Infection Control & Hospital Epidemiology, Oct 2008

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Preps Studied	Primary Outcome	Other Interventions?	Hospital	Healthy Subjects/ Long Term Care
2% CHG/IPA** (Chloraprep®) vs. PVP-I (aqueous povidone-iodine)	SSI	Unknown	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. PVP-I/IPA (Betadine® solution) vs. 2% CHG/IPA (Chloraprep)	SSI	Unknown	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. PVP-I (aqueous povidone-iodine)	SSI	YES incise drapes	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. PVP-I (aqueous povidone-iodine)	SSI	YES incise drapes	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. 2% CHG/IPA (Chloraprep) vs. PVP-I/IPA (Betadine solution)	Positive or negative bacterial cultures	YES Pre-op antibiotics	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs 3% Chloroxylenol (PCMX) (Techni-Care) vs 2% CHG/IPA (Chloraprep)	Quantitative bacterial cultures	YES Pre-op antibiotics	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. PVP-I (aqueous povidone-iodine)	Incise drape lift, wound contamination	YES incise drapes, pre-op antibiotics	X	
Iodine Povacrylex/IPA (DuraPrep solution) vs. PVP-I (aqueous povidone-iodine)	Quantitative skin and catheter cultures	Unknown	X	

Published Clinical Studies of Common Topical Antiseptic Products (*cont.*)

Antiseptic Prep Related Publications	Author	Journal
Cutting Surgical-site Infection Rates for Pacemakers and ICDs	Taylor	Nursing, Mar 2006
An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU	Pronovost et al	New England Journal of Medicine, Dec 2006
Translating Evidence into Practice to Prevent Central Venous Catheter-Associated Bloodstream Infections: A Systems-Based Intervention	Young et al	American Journal of Infection Control, Oct 2006
Reducing Catheter-related Bloodstream Infections: An Extended-Care Facility's Process Improvement Experience	Earhart et al	Journal of the Assoc of Vascular Access, Summer 2006
Effectiveness of a Central Line Bundle Campaign on Line-Associated Infections in the Intensive Care Unit	Galpern et al	Surgery, Oct 2008
Eliminating Catheter-Related Bloodstream Infection in the Intensive Care Unit	Berenholtz et al	Critical Care Medicine, Oct 2004
Three Years Experience in Implementing HICPAC Recommendations for the Reduction of Central Venous Catheter-Related Bloodstream Infections	Garcia et al	Managing Infection Control, 2003
Prevent Nosocomial Infections at the Start	Carpenter	Materials Management in Health Care, Jul 2006

Preps Studied	Primary Outcome	Other Interventions?	Hospital	Healthy Subjects/ Long Term Care
Only CHG with IPA	SSI	YES Timing of antibiotic prophylaxis, clipping instead of shaving	X	
Only CHG with IPA	CRBSI	YES CRBSI bundle	X	
Only CHG with IPA	CRBSI	YES Large sterile drape	X	
CHG with IPA or PVP-I	CRBSI	YES Dedicated inserters, technique, CHG patch, kits		X
Only CHG with IPA	CRBSI	YES CRBSI bundle	X	
Only CHG with IPA	CRBSI	YES CRBSI bundle	X	
Only CHG with IPA	CRBSI	YES CRBSI bundle, silver-platinum catheters	X	
Only CHG with IPA	CRBSI	YES CRBSI bundle	X	

To learn more about DuraPrep solution, contact your 3M representative, call the 3M Health Care Helpline at 1-800-228-3957 or visit www.3M.com/DuraPrep.



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