Comparison 3: Single use disposable adhesive incise drape (antimicrobial or non-impregnated) vs. no adhesive incise drapes

Author, year, reference	Type & duration of study/ Setting	Intervention	Comparator	Primary outcome	Results	Other comments/limitations
Al Qahtani 2014 [19]	Quasi-RCT January-December 2012 Saudi Arabia 91 patients >12 years of age presenting to the emergency department with signs of acute appendicitis Open appendectomy Each patient followed up for 6 weeks Tertiary care hospital	Standard 5-minute skin preparation with 10% povidone-iodine soap followed by the application of an antimicrobial film incise drape (Loban_2 incise drapes; 3M, St Paul, MN, USA)	Standard skin preparation alone No description of conventional draping in this group.	Superficial SSI infection using the CDC definition	Intervention: 6/52 Comparator: 2/39 Relative risk: 2.2 (95% CI: 0.50–10.5). (*P*=0.459)	– Patient assignment done initially on an alternating-day schedule, then on a weekly basis. – Excluded cases done laparoscopically or by a different surgical team. – Excluded cases in which the research criteria were breached, such as the use of a different antibiotic regimen or incision closure in a different way. – 4 (50%) of the 8 patients with a postoperative SSI had pelvic drain insertion, whereas only – 11 (13%) of the 83 patients without SSI had pelvic drain insertion (*P*=0.007). – Incise drapes were easy to use and there were no reported sensitivity reactions. – Of the 6 patients in the antimicrobial film group with postoperative SSI, 3 had a perforated appendix, 2 had a gangrenous appendix and one had an inflamed appendix. – In group 2, one patient had an inflamed appendix and the other had a perforated appendix.

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Segal, 2002 [20]	RCT USA 184 high risk cardiac patients Each patient followed up for 6 weeks 900-bed tertiary hospital	Group 4: one-step iodophor/alcohol water insoluble film with iodine-impregnated incise drape.	Group 3: one-step iodophore/alcohol water insoluble film. This study had 2 more arms: group 1: povidone–iodine soluble paint. group 2: povidone–iodine 5-minute soluble scrub with paint.	Sternal SSI (according to the CDC definition)	Intervention (group 4): 3/51 Comparator (group 3): 1/50	– The study primary objective was to compare preoperative skin preparations. – Only high risk patients were included. – Outcome assessor blinding is not clear. – Secondary analysis of soluble vs. insoluble iodine is significant, *P*=0.02. – Demographics: matching/differences between groups not provided.

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Swenson, 2008 [21]	Observational retrospective cohort study 1 March 1 2002 to 30 June 30 2006 USA Clean, elective, laparoscopic ventral and incisional hernia repair with mesh implementation. Department of surgery, university hospital	Group 1: use of antimicrobial incise drape impregnated with iodophore containing adhesive compound (Loban™, 3M)	Group 2: No antimicrobial-impregnated adhesive drape.	**SSI** was defined as all mesh infections in the first 30-day postoperative period, as well as SSI not related to the mesh. **Mesh infection** was defined as infection that necessitated the operative removal of the mesh.	**SSI:** **drape group: 25/206** **non-drape group: 45/300** *P* =0.36 Mesh infection: **drape group: 16/206** **non-drape group: 26/300** *P* =0.72	- Antimicrobial-impregnated drapes were used more: - in laparoscopic procedures - by residents - by high volume surgeons - for urgent or emergency repair Clean wound classification Current or recent smoking habit Haemodialysis patients Chronic steroid use Peripheral vascular disease

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Yoshimura, 2003 [22]	**Retrospective study** April 1994 to end December 2001 Japan Age range: 29 to 80 years Follow-up: 30 days **Clean-contaminated liver resection for hepatocellular carcinoma** **University hospital**	**Plastic adhesive incise drape impregnated with an iodophor** (Loban™ 2 incise drapes; 3M)	No antimicrobial-impregnated incise adhesive drape	Wound infection (purulent drainage from the superficial incision with or without laboratory confirmation plus one or more of the following signs was required: pain or tenderness, localized swelling or redness or heat)	Wound infection: Impregnated drape: 4/122 No drape: 21/174 *P*= 0.0096	– There were significant differences between the groups in terms of gender, the indocyanine retention test at 15 minutes, aspartate aminotransferase and alanine aminotransferase levels, duration of the preoperative hospital stay, intraoperative blood loss, and the percentage of autologous blood transfusion. – By multivariate regression analysis, body mass index, smoking and lack of drape use were independent risk factors for wound infection. – Most of the bacteria isolated were skin bacteria, including *Staphylococcus aureus* and *S. epidermidis.* – Patients who had had a simultaneous operation for other cancers, including carcinoma of the gastrointestinal tract, were excluded. – Wound infections associated with intra-abdominal infections were omitted because an intra-abdominal infection might cause a wound infection.

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Chiu, 1993 [23]	RCT January – December 1991 Hong Kong (SAR, China) Follow-up: 6 months Age range: 43-97 years Fixation of hip fractures University hospital	Cover the operation site with plastic adhesive incise drape (Opsite™, Smith & Nephew, London, UK; not antimicrobial-impregnated).	Operation site left uncovered "no drape"-	**Wound infection** **Positive swab at wound closures**	**Wound infection**: Intervention: 6/65 Comparator: 5/55 *P* = 0.90 **Positive swab at wound closures**: Intervention: 4/65 Comparator: 1/55 *P* = 0.25	– In both groups the operation site was prepared with povidone solution and draped with sterile towels. – None of the skin swabs taken before incision grew bacteria. – In the drape group, 2/6 of patients with wound infection had positive swabs. – Positive swab at wound closure in the no-drape group was not associated with wound infection.

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Ward, 2001 [24]	RCT, double-blind 18 August 1992 – 29 January 1993 South Africa Caesarean section Regional referral university hospital	Plastic adhesive (not impregnated) incise drapes. (Opsite™, Smith & Nephew; not antimicrobial-impregnated).	No plastic adhesive incise drapes	Wound infection: infection was diagnosed if 2 of 3 features were present: - erythematous cellulitis (erythematous induration either side of the incision line) - seropurulent discharge from the wound - positive swab culture (organisms and leucocytes) Secondary outcome: postoperative length of stay	Wound infection Intervention group: 34/305 Control group: 30/298 *P*= 0.6933	– 8 patients were excluded from randomization due to clinically suspected ruptured uterus. – 2 women from the control group were subsequently excluded, one having a coincidental appendix rupture discovered at caesarean section and the other requesting early discharge on day 2 after caesarean section wound. – Standard sterile double-towel draping applied for all cases. – Sepsis developing after 5 days was not included.

SSI: surgical site infection; RCT: randomized controlled trial; CDC: Centers for Disease Control and Prevention; ASA: American Society of Anesthesiologists