Chlorhexidine

Chlorhexidine is a cationic polybiguanide (bisbiguanide). It is used primarily as its salts (e.g., the dihydrochloride, diacetate, and digluconate).

It is on the World Health Organization's List of Essential Medicines, a list of the most important medication needed in a basic health system.

see Chlorhexidine shower.

A peri-operative bundle, which consisted of peri-operative vancomycin (4 doses), a barrier dressing through post-operative day (POD) 3, and de-colonization of the surgical incision using topical chlorhexidine from POD 4 to 7, was associated with reduced SSI rates and the need for re-do cranioplasties [1].

Many have compared chlorhexidine (CHG) with povidone iodine solution (PVI), but there is emerging evidence for combination usage. Objective To conduct a systematic review and meta-analysis to evaluate if combination skin preparation (1) reduces colonization at the operative site and (2) prevents SSI compared with single-agent use. Data Sources A literature search of MEDLINE, Embase, and Cochrane Database of Clinical Trials was performed. Study Selection Comparative, human trials considering the combination use of CHG and PVI, as preoperative antisepsis, to single-agent CHG or PVI use were included. Studies were excluded from meta-analysis if the use or absence of alcohol was inconsistent between study arms. Data Extraction and Synthesis The study was performed using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Main Outcomes and Measures The primary outcome for meta-analysis was surgical site infection. The secondary outcome was colonization at the operative site. Results Eighteen publications with a combination of CHG and PVI use were identified. Of these, 12/14 inferred promise for combination usage, including four trials eligible for meta-analysis. Only one trial reported SSI as its outcome. The remaining three considered bacterial colonization. Combination preparation had a pooled odds ratio for complete decolonization of 5.62 (95% confidence interval 3.2 to 9.7, $p < 0.00001$). There was no evidence of heterogeneity (Cochran's Q 2.1, 2 df , $p = 0.35$). Conclusions and Relevance There is emerging, albeit low-quality, evidence in favor of combination CHG and PVI preoperative antisepsis. Further rigorous investigation is indicated [2].

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Le C, Guppy KH, Axelrod YV, Hawk MW, Silverthorn J, Inacio MC, Akins PT. Lower complication rates for cranioplasty with peri-operative bundle. Clin Neurol Neurosurg. 2014 May;120:41-4. doi: 10.1016/j.clineuro.2014.02.009. Epub 2014 Feb 25. PubMed PMID: 24731574.
2)
Davies BM, Patel HC. Systematic Review and Meta-Analysis of Preoperative Antisepsis with Combination Chlorhexidine and Povidone-Iodine. Surg J (N Y). 2016 Aug 10;2(3):e70-e77. doi: 10.1055/s-0036-1587691. eCollection 2016 Jul. PubMed PMID: 28824994; PubMed Central PMCID: PMC5553484.