

[OP057] COMPRESSION IN ANKLE FRACTURE TREATMENT, THE CAT-STUDY

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Free Paper Session: Acute Wounds

Aim: To perform a clinical, randomized, controlled study, to evaluate the effect of a compression system* and a 2 layer compression bandages** on the incidence of complications (infection, wound dehiscence, prolonged healing, skin necrosis, exposed hardware, DVT, amputation and death) after operation for mono-, bi- and trimalleolar fractures.

Hypothesis: That the compression regime lowers the incidence of wound infections by 15% on patients with mono-, bi-, and trimalleolar fractures, treated according to the ORIF-principles.

Method: A clinical, randomized, controlled study with a 6 week follow-up. 156 patients are randomized at the Emergency Department, to either the compression regime (a compression system*, a 2 layer compression bandages** and compression stocking) or elevation (blue cushion).

Patients are evaluated in the outpatient clinic 2 and 6 weeks after surgery, regarding to:

- Primary endpoint: infection.
- Secondary endpoints: wound dehiscence, prolonged healing, skin necrosis, exposed hardware, DVT, amputation and death.

Results / Discussion: An extract of preliminary data on 65 patients shows:

- Necrosis 2 weeks: 4% in the intervention group and 32% in the control group (P-value 0.006)
- Necrosis 2 or 6 weeks: 3% in the intervention group and 31% in the control group (P-value 0.001)
- Wound dehiscence 2 weeks: zero events in the intervention group, and 19% in the control group (P-value 0.02)
- No difference in the incidence of infection

Conclusion: The results show a tendency towards a beneficial effect of compression, regarding necrosis and wound dehiscence.

- This confirms clinical assumptions and observations
- The study will continue inclusion until 156 patients are enrolled

* Flowtron Hydroven 3™

** Coban 2 lite™

[OP058] PREVENTION OF CHRONICIZATION OF ACUTE WOUNDS IN PATIENTS "AT RISK" : A COMPARATIVE STUDY BETWEEN ANTIMICROBIAL DRESSINGS.

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Free Paper Session: Acute Wounds

Aim: Starting from the consideration of the various factors able to slow down or stop the wound healing process, our group evaluated the possibility of acting on one or more of these factors at the earliest stages of the wound, in order to prevent their chronicisation in patients considered at risk. Since infection is one of these, we decided that it would be the one on which to focus control efforts also in terms of prevention of chronicisation.

Method: A study approved by the local Ethical Committee was designed by our group; it included patients with acute trauma injuries, suffering from diseases that can slow or stop the healing process. Antimicrobial dressings with high hydrophobic power were used in comparison to other bacteriostatic or bactericidal dressings (mainly containing Ag or iodine), and their ability to control the occurrence of infections was evaluated.

We enrolled 440 patients, observed for 8 weeks, and evaluated the healing percentage at 8 weeks, the percentage of wounds unhealed but without infection at final follow-up, and the possible occurrence of side effects.

Results / Discussion: Patients treated with bacterial binding hydrophobic interaction dressings (280/440) did not develop any infection in over 88% (77% healed), against 48% of controls (22% healed).

Allergic reactions were observed only in control group (23 contact dermatitis, mostly by Ag).

Conclusion: The results obtained indicate that an early approach with appropriate antimicrobial dressings, specifically in traumatic wounds, can reduce the possibility of infection, with less need for systemic antibiotic treatment, and reduce the chronicisation in patients at risk.

[OP060] STEROID THERAPY INFLUENCE ON THE FREQUENCY OF DEVELOPMENT AND PECULIARITIES OF THE WOUND INFECTION BEHAVIOUR IN PATIENTS AFTER SURGICAL TREATMENT OF THE ULCERATIVE COLITIS

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Thursday, May 14, 2015

Free Paper Session: Acute Wounds

Aim: Improvement of surgical treatment results in patients with ulcerative colitis (UC).

Method: 183 patients with severe UC were operated on from 2007 to 2013. In 109 (59,5%) cases the patients had been undergoing steroid therapy for more than 1 month before the operation in the dosage of not less than 20 mg per day. The other 74 (40,5%) patients did not have steroid therapy at the operation moment. We have carried out a retrospective analysis of the incidence dependence of incisional surgical site infection, stoma complications and the periods of their healing on the dosage and duration of steroid therapy.

Results / Discussion: Surgical site infection and parastomal complications (retractions) developed in 33 (30,3%) out of 109 patients. In the group of patients who did not get steroid therapy (n=74) such complications appeared only in 8 (10,8%) cases ($p=0,002$). In the group of patients with steroid therapy wound healing took place on the average $M=22,5$ days later, whereas among patients without steroids this period was $M=14$ days ($p<0,05$). Significant decrease of reparative processes with wounds healing in patients who had been undergoing hormone therapy for a long time, required carrying out complex treatment including NPWT and modern wound dressings.

Conclusion: Availability of steroid therapy in UC patients for more than 1 month with the dosage not less than 20 mg per day is a predictor for increasing the frequency of surgical site infection and stoma complication development, and also influences the duration of wounds healing.

[OP061] NEGATIVE PRESSURE INCISION MANAGEMENT SYSTEM USED ON A ROUTINELY BASE IN GENERAL SURGERY DEPARTMENT

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Free Paper Session: Acute Wounds

Aim: The aim of this study is to investigate the effect of a negative pressure incision management system (IMS)* on a general surgery patients population, focusing on Surgical Site Infections (SSI), risk factors and NNIS risk index.

Method: 26 consecutive patients undergoing a surgical procedure, both in elective and emergency setting, had IMS placed and applied at -125 mmHg for 7 days. A retrospective observational study was carried out. Univariate analysis was employed to investigate the influence of risk factors in development of SSI. Expected and observed value of SSI was used to calculate the impact of IMS on the expected risk of SSI.

Results / Discussion: Selected patients were 14 men (53.85%) and 12 women (46.15%) with an average age of 80.5. 24 were abdominal surgery procedures (8 emergency and 16 elective). 19 incisions (73.08%) were on the midline, 8 patients (30.77%) have had an ostomy at the end of the procedure and 14 patients (46.15%) were admitted to post-surgical intensive care unit. 3 patients developed a superficial SSI (11.55%); 1 deceased (not related to SSI). Diabetes ($p=0.02$), peripheral vascular disease ($p=0.05$) and wound class ($p=0.05$) are significantly linked to SSI. In the abdominal and colorectal sub-group the SIMS decreased the expected number of SSI by 31% and 54% respectively.

Conclusion: Negative pressure IMS is safe and easy to use on a routinely base in abdominal surgery; it decreased the incidence of wound complications, mainly in the colorectal subgroup.

*Prevena (Kinetic Concepts, Inc, San Antonio, Texas).

[OP062] CHALLENGES AND OPPORTUNITIES; CONDUCTING SKIN INTEGRITY RESEARCH IN ACUTE CARE, LESSONS LEARNT FROM THE PILOT INTACT STUDY

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Free Paper Session: Acute Wounds

Aim: Incontinence-associated dermatitis (IAD) is commonly complicated by a secondary *Candida albicans* infection, yet little is known about the relationship between these conditions. The IntACt study explores these associations. The aim of this paper is to highlight challenges and opportunities found in the conduct of this research.

Method: This observational time to event study was conducted in the internal medicine service of an Australian tertiary hospital. Registered nurses (RNs) employed as research assistants were trained in recruitment, data and pathology collection. Perineal skin inspections and swabs to detect the presence *Candida albicans* were performed at specified time-points.

Results / Discussion: Of the 2721 patients screened for eligibility, 1272 (46.7%) were ineligible (main reasons: > 48 hours since admission, expected length of stay < three days, inability to provide consent). Of the 1367 (50.2%) patients eligible for recruitment, 82(6%) were enrolled. Reasons for non-consent; discomfort with swabs 42 (1.5%), not stated 34 (1.2%) research participation fatigue eight (0.3%). The study endpoint was met by 34 (42%) patients, while 39 (83%) were discharged before the endpoint. Six (7.4%) patients withdrew, five (6.2%) were discharged for medical reasons and four (4.9%) died.

Conclusion: Research in acute care is complex. Recruitment posed challenges; however, patient retention was high. The unexpectedly low recruitment rate highlights barriers such as short hospital stays, stigma associated with incontinence, the nature of data collection, and difficulties obtaining consent. Clinical staff engagement is pivotal for research success. While RNs were proactive and engaged, greater opportunity for RNs to provide input at study design phase might improve recruitment.

[OP063] REDUCING THE IMPACT OF SKIN TEARS IN THE ELDERLY

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Free Paper Session: Acute Wounds

Aim

To investigate the effectiveness of skin moisturising lotion and cleanser for reducing skin tear incidence and associated costs.

Method

A cluster randomised control trial (CRCT) was conducted across 14 aged care facilities (980 beds) to investigate the effectiveness of applying twice daily moisturiser to the extremities for reducing skin tears. A retrospective economic evaluation was conducted to determine costs associated with prevention and management of skin tears in both groups. A prospective economic analysis investigated the financial implications of the intervention if adopted in 20%, 40% and 60% of Australian aged care facilities. Two further CRCTs will be completed in April and will determine the costs and effectiveness of bathing elderly residents with moisturising cleanser as compared to usual care for reducing skin tears. Comparisons between 1) twice daily moisturiser, 2) twice daily moisturiser and cleanser and 3) cleanser alone will be conducted to determine the most efficacious and cost effective prevention strategy.

Results/Discussion

Twice daily moisturising of residents reduced skin tear incidence by 50% and demonstrated associated cost savings. Cost savings of \$134,733, \$269,469 and \$404,202 would be achieved if 20%, 40% and 60% of Australian aged care facilities adopted this protocol. No further reduction in incidence was noted when residents were bathed in a moisturising cleanser and had additional twice daily moisturiser applied. Findings for moisturising cleanser alone will be available and presented.

Conclusion

The relatively inexpensive cost of twice daily moisturiser was proven to reduce incidence by 50% and be cost effective.

[OP064] INCIDENCE OF SKIN TEARS AND ASSOCIATED FACTORS: SISTEMATIC REVIEW

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Free Paper Session: Acute Wounds

Aim: Identify and analyse the incidence of skin tear and factors associated with its occurrence.

Method: Systematic literature review published up to June 2014. Included studies published in full in English, Spanish or Portuguese. The studies were analysed according to strengthening the Reporting of Observational Studies in Epidemiology and Guidelines for Critically Appraising Studies of Prevalence or Incidence of a Health Problem.

Results / Discussion: The analysis of five studies showed lesion incidence of 0.92% to 4.6%. The incidence of skin tear ranged from 0.92% to 2.23% in long term care facilities. Old age, mobility, falls and accidental bumps, female, history of skin tears, cognitive impairment / dementia, addiction to higher transfers and limbs were the most cited risk factors. The performance of the studies was hampered by a lack of confidence intervals in the estimates of incidence and poor description of the study subjects.

Conclusion: The incidence of skin tear ranged from 0.92% to 4.6% in different scenarios, and were primarily associated with old age, impaired / limited mobility, falls and accidental bumps, female, history of skin tear, cognitive impairment / dementia, dependence for transfers and higher members.

[OP065] A PROSPECTIVE EVALUATION OF A NEW DRESSING, BASED ON ANTIOXIDANT-ANTI-INFLAMMATORY PROPERTIES, ON WOUND HEALING

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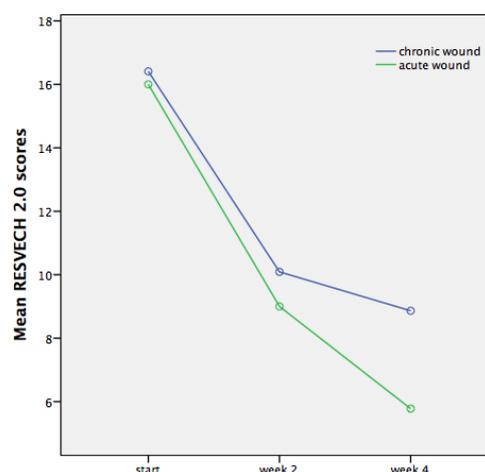
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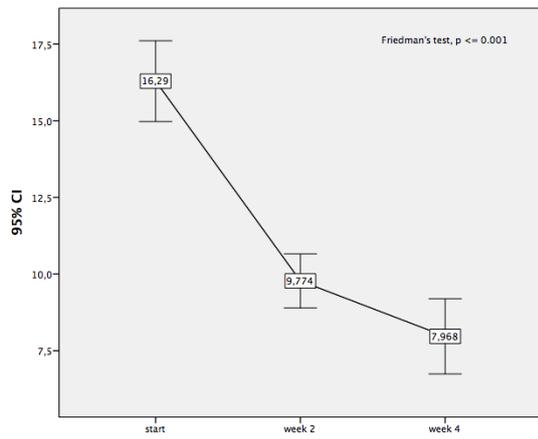
Free Paper Session: Acute Wounds

Objective: To describe the clinical findings of a new antioxidant dressing in a group of patients with acute and chronic lower extremity wounds.

Method: A prospective case series of 31 outpatients with acute (traumatic wounds) or chronic (venous, calciphylaxis and hypertensive) lower extremity wounds. Treated for a period of 4 weeks or complete healing. RESVECH 2.0 was used for the assessment and evolution of the wounds. The scale considers 6 items: size of the lesion, depth/tissue concerned, edges, type of tissue in the wound bed, exudates and infection/inflammation. The scale is scored numerically and can score ranging from 0 to 35 points, wound healed and the worst possible lesion respectively and is also accompanied by operational definitions of each item and its value-form. Analysis was performed by "intention to treat". Descriptive and inferential analyses were performed.

Results: Of the 31 patients 11 (35.5%) were men and 20 (64.5%) were women. The participants had a mean age of 71.70 years (± 10.10 years, range 44 to 86, median 73 years). Most of the wounds were venous leg ulcers (64,5%) followed by traumatic wounds (25,8%), with a median duration of 16 and 2 months for chronic and acute wounds respectively. 41.93% of the chronic wounds were recurrent. 9 (29%) completely healed on the course of the study (77,8% acute wounds, RR = 8.56, $p \leq 0.001$). significantly relevant decreases in RESVECH 2.0 score evolution (Friedman's test, $p \leq 0.01$) were observed in general and compared between chronic and acute lesions (Figures). Again, a statistically significant difference between both types of wounds is stated ($p \leq 0.001$), in favour of acute wounds. This observation is in good agreement with the expected mechanisms of action of HR006 in the wound and the experimental data obtained *in vivo* in the animal model.





Figures. RESVECH 2.0 score evolution in all types of wounds and depending on general aetiology.