

## COST EFFECTIVENESS OF AN AIR-INFLATED STATIC OVERLAY IN PRESSURE ULCER PREVENTION: RANDOMIZED CONTROL TRIAL

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### INTRODUCTION

- Pressure ulcers represent a serious condition that can increase morbidity and mortality (1-3).
- While numerous pressure-relieving surfaces are available for the prevention of pressure ulcers, there is insufficient evidence to draw conclusions regarding their cost effectiveness (2, 4).

### OBJECTIVES

- Establish the profile use of rented surfaces on moderate to very high-risk patients in preventing pressure ulcers.
- Compare the efficacy of different surfaces in the prevention of pressure ulcers.
- Compare costs associated with the use of an inflated static overlay (ISO\*) with the standard treatment, which consists of renting a microfluid static overlay (MSO\*\*) or a low air loss dynamic mattress (LALDM\*\*\*) with pulsation for moderate to very high-risk patients.
- Evaluate patient comfort.

### METHODS

#### RANDOMIZED PROSPECTIVE CONTROL TRIAL.

- Subjects were included if their Braden score was  $\leq 14$ , had no skin lesion, were  $\geq 18$  years old, were admitted to medical, surgical, active geriatric or ICU units.
- Sample size was calculated a priori. To detect a clinically accepted difference of 10% in the incidence proportion of pressure ulcers, a one-sided equivalence test of a difference was used (alpha of 0,05, minimum power of 80%) between the two groups.
- 110 patients were randomized into either a control group lying on rented surfaces (MSO\*\* or LALDM\*\*\*) or into an experimental group on purchased surfaces (ISO\*).
- Both groups had identical positioning protocols.
- Head to toe assessments were done 3 times a week for a maximum of 14 days.

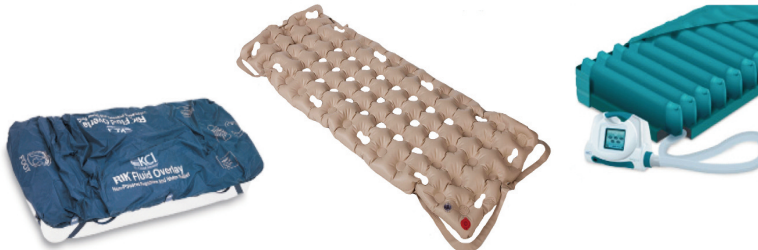
### RESULTS

#### Results MSO\*\* & LALDM\*\*\* versus ISO\*

Variable	Control MSO** & LALM*** (n = 55)	Experimental ISO* (n = 55)	P value
Primary outcome • Pressure ulcer incidence	11% (6/55)	4% (2/55)	0,2706 <sup>1</sup>
Secondary outcomes • Comfort	90% (27/30)	85% (29/34)	0,7129 <sup>1</sup>
Total costs	\$16 086,00 (n = 55)	\$3 364,00 (n = 55)	<0,0001 <sup>2</sup>

1= FISHER EXACT TEST, 2= WILCOXON TWO SAMPLE TEST

- NO SIGNIFICANT DIFFERENCE IN PRESSURE ULCER INCIDENCE BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS (P=0,2706).
- NO SIGNIFICANT DIFFERENCE IN COMFORT (P=0,7129).
- SIGNIFICANT DIFFERENCE IN COSTS \$16 086,00 VERSUS \$3 364,00 (P<0,001).



### DISCUSSION/CONCLUSION:

- Using an ISO\* for pressure ulcer prevention on moderate to very high risk patients is as efficient as the rented surfaces (MSO\*\* or LALDM\*\*\*) but significantly decreases costs.
- Results of this study may give others the incentive to examine the curative properties of this cost efficient surface with patients living with existing pressure ulcers. The challenge of finding a cost effective curative approach for treating pressure ulcers is a valuable asset for the health care system.
- Ease of use of the equipment and patient transfer are important factors to consider and would be worthy aspects to explore in a future study.

### REFERENCES

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