

# COMPARISON OF TWO GRANULAR HEMOSTATIC AGENTS IN A NEW LETHAL MODEL OF EXTREMITY ARTERIAL HEMORRHAGE IN SWINE

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# Why Hemostatic Dressing ?



## Hemorrhage / External

1<sup>st</sup> preventable cause of death in the battlefield

*(Champion J Trauma 2003)*

2<sup>nd</sup> leading cause of death in civilian trauma

*(Kauvar J Trauma 2006)*

External Hemorrhage battlefield / frequent

first priority rescue team / not ABC / C first NATO

→ Tourniquet, **hemostatic dressing**

# Hemostatic Dressing



3<sup>th</sup> generation in 5 years / intensive research development

Differents compositions (zeolithe, chitosan, clay ...)

Differents présentations (bags, band, granulars,...)

Indication : External hemorrhage

# Hemostatic Dressing



Clinical evaluation on the battlefield / difficult

Experimental evaluation / more easy

Limited by : Different wounds models

Limited by : Compression never assessed

# Granular Hemostatic Dressing



NATO Medical Conference 2008  
8<sup>th</sup> NATO Blood Conference

*Time to learn the lessons*

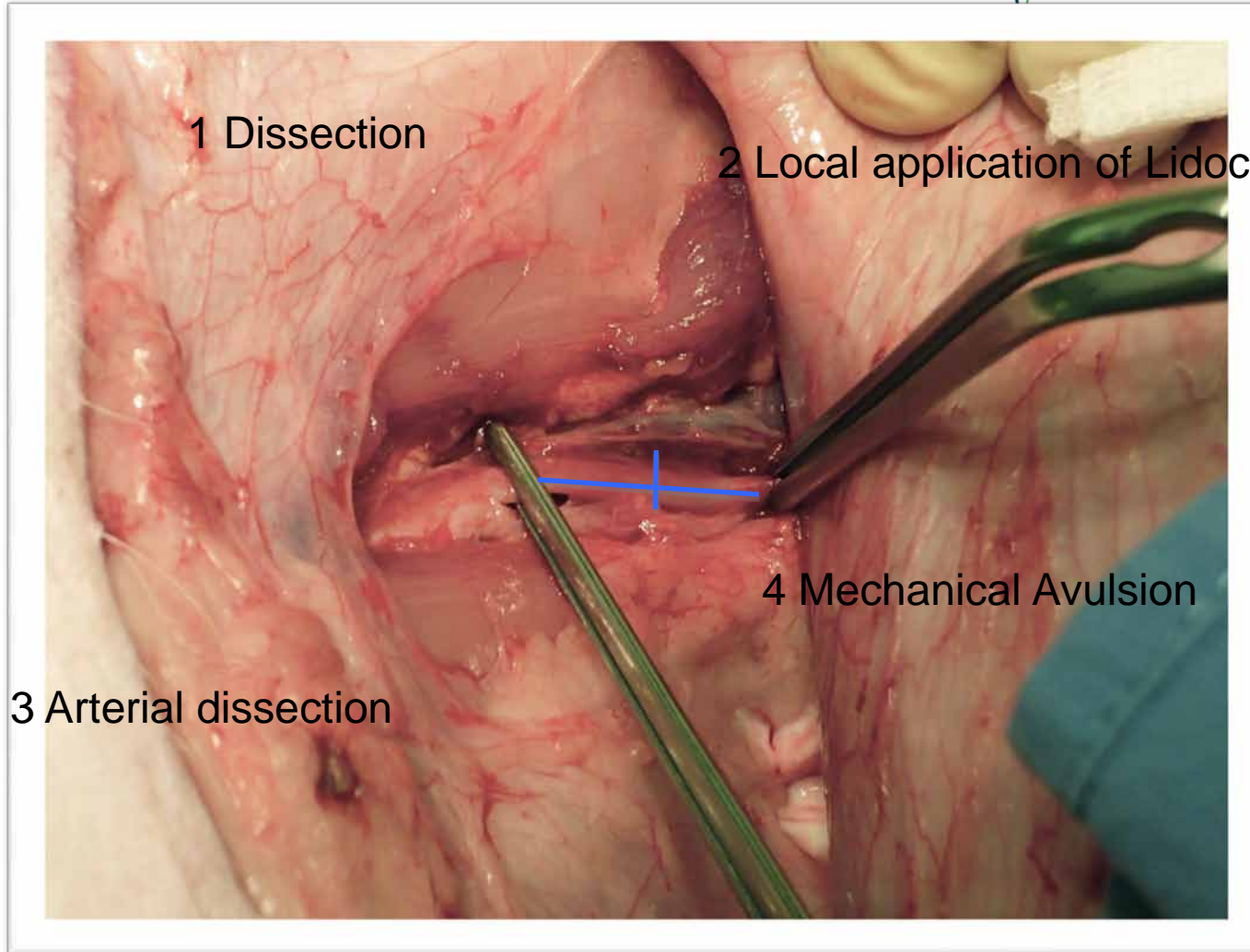
## WoundStat™



## Celox®



# Wound Extremity lesion



# Wound Extremity Lesion



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*Time to learn the lessons*



# Material - Methods

24 swine – 3 groups of 7 (WS, CX, SD)

Anesthesia : Ketamine / Sufentanil

Equipment : Central Venous / Arterial catheter

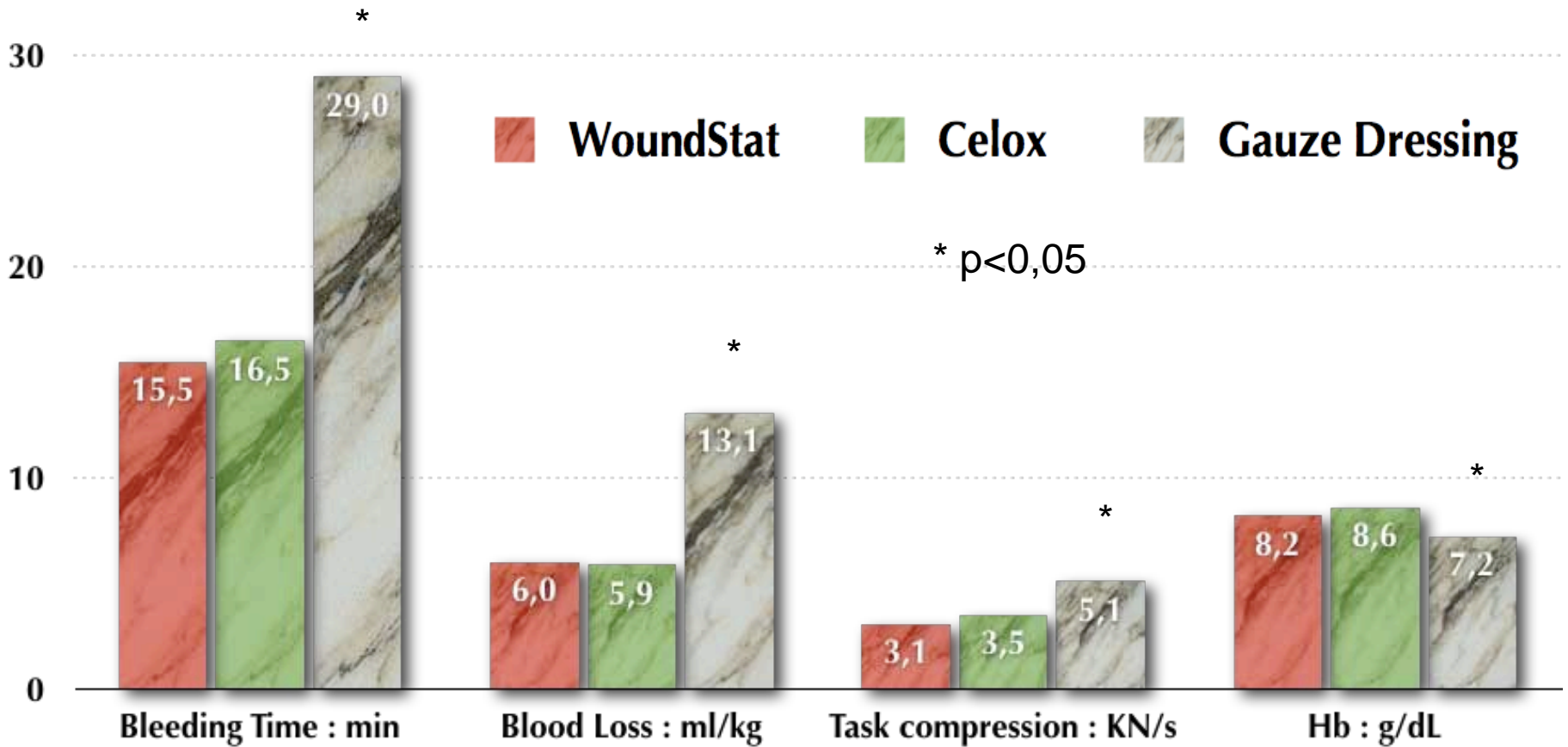
No fluid resuscitation : 10ml/kg/h Ringer Lactate

Measurements / 1h

1<sup>st</sup> End Points / Hemostatic quality : Bleeding time,  
task compression to stop bleeding

2<sup>nd</sup> End Points / Bleeding : Volume, Hemoglobin  
/ Hemodynamic : MAP / CF

# Results



# Results



## Rebleeding (failure of initial hemostasis)

*SD : 4 / 7 \**

*WS : 0 / 7*

*CX : 1 / 7*

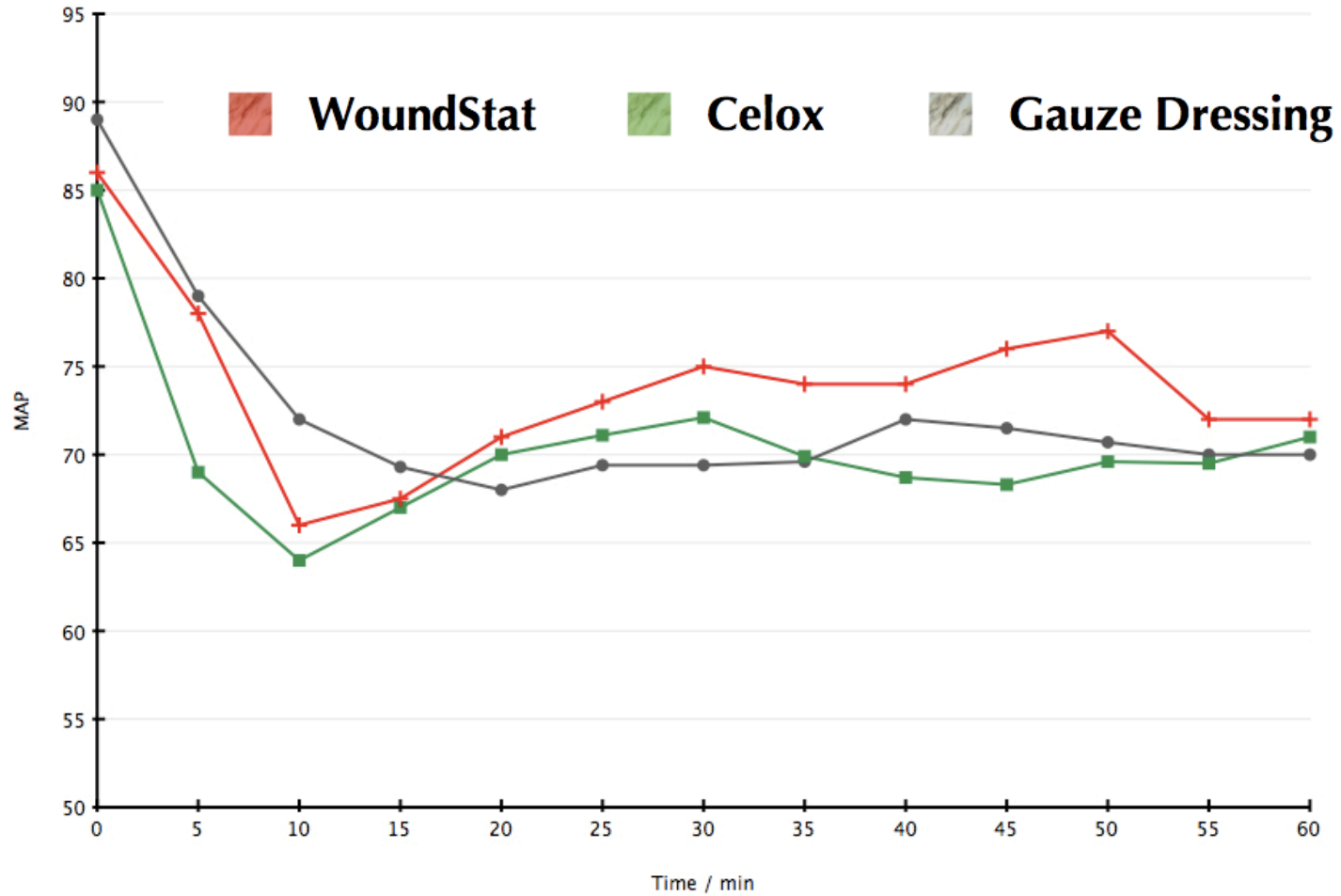
## Survival at 60 minutes

*SD : 7 / 7*

*WS : 7 / 7*

*CX : 7 / 7*

# Results



# Discussion



WS and CX / our study / lethal wound extremity  
similar results  
*economyse* task compression  
*decrease* bleeding time  
*decrease* blood loss

