The hazard of silver-containing dressing on the MRSA infected wound in SD - rat and STZ - rat.
Introduction

Silver containing dressing materials

Effect

Antibacterial

Side Effect

Deposition  Cytotoxicity  Delay wound healing
Introduction

Hypothesis and Objectives

- **Hypothesis**
  - If there are the abnormality of serum chemistry examination, it has the hazards of silver dressings.
  - If there are the deposition of silver in organs, it has the hazards of silver dressings.

- **Objectives**
  - We can compare hazard of silver dressings in diabetic wound infected MRSA of SD-rats and STZ-rats.
Materials and Methods

Wound model
Materials and Methods

Reagents

Acticoat®  Aquacel®-Ag  Medifoam silver®

PolyMem silver®  Ilvadon®  Betadine®

Fig. 1 Treat of reagents
Materials and Methods

Serum Chemistry Examination

- Liver function test
  - GOT(AST), GPT(ALT), ALP
- Renal function test
  - BUN
- Protein
  - Albumin
- Etc.
  - LD, CK

Fig. 2 Blood sample
Materials and Methods
Deposition of Ag

Fig. 3 Detection of Ag by Energy Dispersive Spectrometer

www.intecltd.co.kr
Pre-Results

Wound size

Fig. 4 Change of wound size depending on date.
Fig. 4  After 15 days of wounded, value of GOT, GPT and ALP.
* Significant difference by Dunnett's test compared with Betadine group, P<0.05
Results
Renal function test

Fig. 5 After 15 days of wounded, value of BUN.

* Significant difference by Dunnett's test compared with Betadine group, P<0.05
Results

Protein test

Fig. 6 After 15 days of wounded, value of protein.
* Significant difference by Dunnett's test compared with Betadine group, P<0.05
Fig. 7 After 15 days of wounded, value of LD and CK.
* Significant difference by Dunnett's test compared with Betadine group, P<0.05
Results

Change of value depending on date

Fig. 8 Value of GOT according to date.
* Significant variation by ANOVA, P<0.05
Results

Change of value depending on date

Fig. 9 Value of ALP according to date.
* Significant variation by ANOVA, P<0.05
Results

Deposition of Ag

Fig.10 Detection of Ag in skin  
Fig.11 Detection of Ag in Liver
Discussions

- No statistically significant differences of serum chemistry examination were observed between control group and treat group at 15 days after wounded (P-value<0.05).

- In SD-rat and STZ-rat, values depending on date were no statistically significant (P-value<0.05).

- In all organs, there weren't any deposition of Ag.
Conclusions

Through the results of some liver damage is suspected presumably (Ac, P), the meaning of the value is vague.

During wound healing, effect of Ag to organ is weak.

Therefore, between SD-rat and STZ-rat didn’t be observed different tendency and hazard of silver dressing reagents is weak.
Thanks for your attention