WOUND MANAGEMENT WITH A VIEW

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Medi-Globe Corporation stands for high expertise in the international med-tech industry for over 20 years. Adjacent to manufacturing and sales of gastroenterology and urology products, Medi-Globe GmbH develops and produces modern wound care on the basis of a unique glycerine gel at its manufacturing base in Germany.

The products of Medi-Globe are successfully marketed through a global distribution network in over 50 countries with its own branch offices in USA, France, Brazil and China.

GLYCOcell® SondoFix® - the optimal antimicrobial care of PEG’s: with this product started the successful marketing of the GLYCOcell® product range
MODERN WOUND MANAGEMENT

The standards of wound care have changed drastically based on the criteria of modern wound care. The conservative way of wound treatment was a dry gauze dressing sometimes in combination with healing ointments. Today modern wound dressings are used solely as therapeutic agents. The results of these fundamental changes are impressive. Long intervals of dressing changes, fast healing progress, high patient compliance and more cost efficiency convince physicians, patients and health care providers.

Characteristics of modern wound care were defined by Dr. T.D. Turner in 1979:

- Maintenance of a moist wound milieu
- Removal of excess wound exudate and toxic particles
- Support of good gas exchange
- Providing isolation of the wound
- Protection of secondary infection by external microorganism
- Facilitation of atraumatic dressing changes
- No release of fibers or other impurities
THE GLYCERINE-EFFECT

This dressing can be used for dry as well as moist wounds due to the physical effect of the glycerine. GLYCOcell® causes a significant germ reduction within 24 hours of application on infected wounds without using additives like silver or antibiotics. An environment of significant reduced bacteria and fungi colonization has been proven in clinical tests after 24 hours.

The special gel absorbs wound exudate into its matrix and at the same time a small amount of glycerine is released to the wound. It enables an ideal moist wound environment without providing additional medium for germ growth. The new granulation tissue will be protected due to the glycerine release which facilitates the dressing from adhering to the wound.

The healing process will be significantly enhanced by having longer dressing change intervals of up to 7 days. The semi transparent feature of the glycerine gel provides a continuously monitoring of the wound status. The favorable combination of antimicrobial effect, absorbency, moisture regulation, long dressing change intervals and transparency provide the optimal prerequisite of a efficient and effective wound management.
CLINICAL EVIDENCE

In-Vitro-Tests confirm

- You can download the original in-vitro-test as an pdf-file under: www.glycocell.de

  Test report* 031300-10-A [Rev. 01], Medical Device Services, Gilching, 2004 and Test report** 074113-10, Medical Device Services, Gilching, 2008

- Efficiency by MRSA colonization
  Test report 042145-10, Medical Device Services, Gilching, 2004
# GLYCOCCELL APPLICATIONS

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RECOMMENDED BY

SMALL
CHRONIC
TRAUMATIC
INFLAMED
DEEP
SURGICAL
SUPERFICIAL
LARGE
NECROTIC
INFECTED
WOUNDS
PRODUCT FEATURES
AT A GLANCE

THE GLYCERINE GEL

- Effective infection control with proven bacteriostatic and fungistatic properties.
- The hygroscopic property assists in cleansing of the wound.
- The transparency of gel and tape provide a constant monitoring of the wound.
- The gel does not adhere to the wound and allows a painless removal of the dressing.
- The gel absorbs wound secretion and maintains an optimal moist wound environment.
- The glycerine gel keeps the skin smooth.
- The soft gel pad offers protective and comfortable cushioning.

THE ADHESIVE TAPES

GLYCOcell® Products
- The microporous tape offers high moisture permeability.
- The tape edges can be torn off.
- The tape offers easy handling and dividing.

GLYCOcell® SOFT Products
- The very thin, flexible and breathable tape offers waterproof protection (e. g. while showering).
- The extremely elastic tape adjusts extraordinarily well to body contours and adheres even on moving body regions.
- The tape offers optimal comfort.
GLYCOcell® 5 x 7 GEL
GLYCOcell® 10 x 10 GEL

- Glycerine gel dressing
- Gel-sizes: 5 x 7 cm & 10 x 10 cm
- Without adhesive tape
  → Secondary fixation is necessary
- Ideal to fill deep wounds
- Perfect to shape on difficult body regions
- Gel dressing can be easily divided into smaller sizes
GLYCOcell® SOFT 5 x 7

› Rectangular glycerine gel wound dressing
› Gel-size: 5 x 7 cm

› The very thin, flexible and breathable tape offers optimal comfort

› Strongly recommended by surgical and traumatic wounds (e. g. abrasions and burns)
› The adhesive tape adjusts extraordinary well to body contours and adheres even on moving body regions
› Showering is possible because of the waterproof adhesive tape
GLYCOcell® SOFT MiniFIX

- Oval glycerine gel wound dressing
- Gel-size: 3 x 2 cm
- The very thin, flexible and breathable tape offers optimal comfort
- Recommended by surgical wounds, e.g. birth mark or wart removal
- Perfect prevention of blisters
- Care and protection after small incisions
- Very suitable for superficial wounds in plastic surgery
- Showering is possible because of the waterproof adhesive tape
GLYCOcell® SOFT SondoFIX®

- Triangular glycerine gel dressing with slit opening
- Gel-size: 6.5 x 6.5 cm

- The very thin, flexible and breathable tape with slit opening offers optimal comfort

- Ideal for PEG tubes
- Chest tubes
- Supra pubic catheters
- Showering is possible because of the waterproof adhesive tape

Important information: SondoFIX® is also available with microperforated adhesive tape
GLYCOcell® SOFT VenFIX i.v.
GLYCOcell® SOFT MiniFIX i.v.

- Glycerine gel dressings with slit opening
  - Gel-sizes: 3.5 x 4.5 cm & 3 x 2 cm
- The very thin, flexible and breathable tape with slit opening offers optimal comfort
- Central venous line
- Peripheral and dialyse catheters
- External fixators
- Pediatric lines and catheters
- Showering is possible because of the waterproof adhesive tape
SOFT VenFIX i.v.
SOFT MiniFIX i.v.
GLYCOcell® 5 x 7
GLYCOcell® 10 x 10

- Glycerine gel wound dressings
- Gel-sizes: 5 x 7 cm / 10 x 10 cm

- Microperforated adhesive tape offers a very high water vapor permeability

- Adhesive tape can be easily torn off as needed (e.g. by sensible skin)
- Dressing can be used without adhesive tape
- Glycerine gel can be divided into each size as needed
- Wound dressing can be used underneath compressing dressing
GLYCOcell

5x7
10x10
GLYCOcell® FixoFORM

- Glycerine gel wound dressing in an anatomical fitted comfort form
- Gel-size: 12.5 x 13.5 cm

- Microperforated adhesive tape offers a very high water vapor permeability
  → Secondary fixation is necessary

- Used for heel and shoulder wounds
- Extraordinary fit by knee and elbow injuries
- Anatomical & convenient fitting
  → Additional fitting and cutting becomes unnecessary
FixoFORM
New glycerine wound dressing modality for Peristomal PEG dressing: a simple, convenient, economical and better option

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2) Institute of Pharmaceutical Chemistry, J.W. Goethe University Frankfurt, Germany,
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BACKGROUND AND AIMS
Peristomal PEG (Percutaneous endoscopic gastrostomy) site infection is clearly the most common post procedure complication. Despite prophylactic antibiotics, the routinely performed ‘pull’ type PEG placement technique has been associated with high peristomal infectious complications (3-30%; Panigrahi et al., 2002).

Conventional wound care following PEG placement requires daily change of the wound dressing initially. New glycerin hydro gel wound dressing has been proposed to possess more effective antimicrobial properties. It can be kept for up to 7 days, eliminating the need for daily change of dressings of the PEG wound.

The aim of the present study was comparing the occurrence of peristomal infections, and the frequency of change of wound dressing between the groups of patients offered conventional vs. the new glycerine wound dressing.

PATIENTS AND METHODS
SondoFix® (Medi-Globe Gmbh, Germany) is a triangular glycerine wound dressing equipped with a pre-cut slit which facilitates its easy fixation around the PEG catheter. A hypoallergenic, semi-transparent and cushioned plaster is gelled allowing easy application and wound inspection.

68 patients undergoing PEG were prospectively evaluated from January 2007 to November 2008, 34 patients received a conventional wound dressing while 34 were offered the SondoFix® wound dressing. Both patient groups were equally matched for age, sex, and weight. The PEG site was assessed for wound inflammation on the day after the procedure and subsequently 1, 2 and 4 weeks post procedure using the validated wound scoring system of Jain et al. (1987). A Wound score of more than 8 or the presence of frank pus was regarded as a major infective complication.

RESULTS
At the end of the first and second week, a statistical significant reduction of the mean wound score was shown on patients with glycogel wound dressing, compared to those with a conventional wound dressing (1st week: 1.64 ±1.6 and 3.12 ±2.69, p<0.0082; 2nd week: 1.37 ±1.11 and 2.53 ±2.37, p<0.023). After 4 weeks, the wound score in both groups was comparable.

The patients in the SondoFix® group had 4.56 ± 1.6 changes of the wound dressing in 4 weeks, while patients with the conventional wound dressing received 22.63 ± 6.6 wound dressings (p<0.000001). One of the patients with conventional wound dressing developed a major peristomal infection. Three patients in the SondoFix® group died due to underlying disease. The wound dressing of five patients in the SondoFix® group had to be removed ahead of time, in the other two cases due to an local allergic reaction that seemed to be caused by the gel.

CONCLUSION
The new glycerine wound dressing significantly reduces peristomal PEG site wound infections as compared to the conventional wound dressings.
Also, the glycerine wound dressing requires about 5 times less frequent changes of the dressing making it simpler, more convenient, less labor intense and an economical option for wound management post PEG.
As a minor limitation, glycogel wound dressings are contraindicated by excessive wound secretion and may cause minor allergic reactions.

REFERENCES
Panigrahi H, Shreeve DR, Tan WC, Prudham R, Kaufman R.
Improved PEG* stoma care by using a glycerine-gel dressing (SondoFIX®)

A CLINICAL APPLICATION
N. Stergiou, T. Mindermann, M. Klump,
Asklepios Klinik Seligenstadt, Germany, Unit for internal medicine

INTRODUCTION
The goal of this clinical application is to examine the safety of a glycerine hydro gel dressing (SondoFIX®) on initial wound care by a new percutaneous endoscopic gastrostomy (PEG) in reference to the occurring complications especially by local infections.

METHOD
In a test period of 19 month (6/2005-12/2006) 60 patients (20 male, average age 76.9 years [35-95 years] were with a PEG to ensure enteric feeding. The stoma dressing used in this trial was a glycerine hydro gel dressing (SondoFIX®), applied between the holding plate and the abdominal stoma site for duration of 7 days. No dressing changes were performed in this period of time. After 36 to 50 hours of the invasive procedure, the PEG tubing was mobilized by 1.5 to 2 cm with the special designed gel dressing still in place. The removal of the dressing took place after 7 days to assess the stoma site in concern of local inflammatory reactions.

RESULTS
During the examination period, 2 out of 60 patients had a notable local reddening at the stoma site by the application after seven days. 0 out of 60 cases had serious infections with purulent discharge or signs of septic complications. A procedure related abdominal wall haematoma, a local bleeding after PEG procedure and bleeding due to self-manipulation of the PEG tubing by the patient were presented. In one case an allergic reaction due to the fixing adhesive tape of the glycerine hydro gel dressing occurred. The seven day mortality was 8.3% (5/60), whereas no methodical related deaths and furthermore no mortalities through infection were noted.

SUMMARY
Following a new percutaneous endoscopic gastrostomy, the initial treatment with a glycerine hydro gel stoma dressing (SondoFIX®) for a duration of 5-8 days presents a save method without side effects. A routine dressing change and wound inspection during the first 5-7 days can be done if no clinical evidence of an existing infection is presented. This method seems reasonable validated under the points of view of economical aspects and patient comfort.

*percutaneous endoscopic gastrostomy
Clinical Study of GLYCOcell® in Promoting the Healing of Diabetic Ulcers

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OBJECTIVE

To study the treatment effect of Glycocell on patients with diabetic ulcer. Methods: Totally 60 patients with diabetic ulcers were randomly divided into therapy group and two control groups. The therapy group was treated with Glycocell. The control group 1 was treated with Hydrocolloid. The control group 2 was treated with Vaseline and Gauze. The therapeutic effects of these three groups were analyzed. Results: There were significant differences in the recovery rates in these three groups and the recovery time of therapy group was much shorter than that of the control groups. The antimicrobial effect of Glycocell was more remarkable than that of the control groups. The motor activity of patients presented great difference in these three groups. Conclusion: Glycocell is an ideal wound dressing for treating diabetic ulcers.

Diabetic ulcer is a serious end-stage complication of diabetes, where diabetic foot (DF) is one of the leading causes of disability and mortality in diabetic patients by causing lower limb infections, ulcers and necrosis, and even amputation. The incidence rate of diabetic foot gangrene is 15 times higher than the non-diabetic population. A specific and effective treatment is currently lacking in the clinic. Between August and December 2008, we have added a new dressing, Glycocell, to the routine treatment of diabetic ulcer, and obtained good efficacy.

DATA AND METHODS

GENERAL DATA

A total of 60 patients were included; 28 males and 32 females aged between 21-72 years (mean age 62.5 years) and had a diabetic history of 5-22 years (mean 13 years). All the patients were voluntary subjects. Inclusion criteria: a. Diabetic patients in accordance with the 1985 WTO diagnostic criteria, and have concomitant ulceration of the body surface; b. Patients with diabetic ulcers of clinical stages 1-2; c. Bacterial wound culture positive. Exclusion criteria: a. Death during treatment; b. Diagnosed with widespread necrosis on admission and required amputation; c. Forfeited treatment before the wound healed; d. Has other concomitant serious internal diseases or severe malnutrition; e. Non-adherence with treatment. The 60 patients with diabetic ulcers were randomized into a treatment group and two control groups (1 and 2), 20 patients each group.

The treatment group and the control groups did not have statistically significant differences (p>0.05) in terms of gender, age, history of diabetes, stage and area of ulceration, indicators including Hb, WBC, ALT, BUN, Cr, GLU, TCPO2, and BPI upon statistical analysis, indicating a well-balanced group assignment.

TREATMENT METHODS

The wound was cleaned until fresh blood oozed from the wound. In addition to the routine treatment, the treatment group was also treated with Glycocell, control group I was treated with hydrocolloid, and control group 2 was treated with Vaseline gauze. Most of the patients were placed under observation until their wound healed, while some patients who did not achieve complete wound healing were observed for at least 4 weeks.

INDICATORS

1. Wound measurement:
The wound area was measured using the NIH image analysis software ImageJ. Changes in the wound area (epithelial migration) were measured in all three patient groups before treatment and at 1 week, 2 weeks, 3 weeks, and 4 weeks of treatment, and compared to prior treatment. Complete closure of the wound was considered complete healing (CH); wound area decrease by more than 50% was considered partial healing (PH); wound area decrease <50% was considered insignificant healing (SD); no change or further wound area increase was considered ineffective (PD). CH and PH mean effective treatment, while SD and PD mean ineffective treatment.

2. Bacteriostatic effect:
Bacterial cultures were carried out at the 1st, 2nd, and 3rd dressing change after treatment in order to understand its bacteriostatic effect.

STATISTICAL PROCESSING

Key laboratory data before and after treatment were expressed as x ± s, differences in the laboratory data before and after treatment were tested with the t-test, with p<0.05 was the statistically significant level.
RESULTS

EPITHELIAL MIGRATION (Table 1)

Comparison of the wound area decrease before and after treatment showed that the effective rate of ulcer treatment in the 3 patient groups following a 4-week treatment combined with blood glucose control using conventional treatment were 95%, 70%, and 50%. Statistical analysis showed that when the treatment group was compared to control group 1, \( \chi^2 = 5.625, p<0.05 \); and when compared to control group 2, \( \chi^2 = 10.1, p<0.05 \), both showing that Glycocell is significantly superior to the control groups in promoting the growth of epithelial tissue in wounds.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>CH + PH (cases)</th>
<th>SD + PD (cases)</th>
<th>Effective rate</th>
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<tbody>
<tr>
<td>Treatment group</td>
<td>20</td>
<td>19</td>
<td>1</td>
<td>95%</td>
</tr>
<tr>
<td>Control group 1</td>
<td>20</td>
<td>13</td>
<td>7</td>
<td>70%</td>
</tr>
<tr>
<td>Control group 2</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>50%</td>
</tr>
</tbody>
</table>

BACTERIOSTATIC EFFECT ANALYSIS (Table 2)

Comparison of the bacterial culture before and after treatment showed that the positive rate of bacterial ulcer cultures in the 3 patient groups following a 1-week treatment were 95%, 75%, and 65%. Statistical analysis showed that when the treatment group was compared to control group 1, \( \chi^2 = 3.137, p<0.05 \); and when compared to control group 2, \( \chi^2 = 5.625, p<0.05 \), both having statistically significant differences, indicating that the bacteriostatic effect is better in the treatment group than in the control groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Residual wound bacteria (cases)</th>
<th>Absent wound bacteria (cases)</th>
<th>Effective rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment group</td>
<td>20</td>
<td>1</td>
<td>19</td>
<td>95%</td>
</tr>
<tr>
<td>Control group 1</td>
<td>20</td>
<td>5</td>
<td>15</td>
<td>70%</td>
</tr>
<tr>
<td>Control group 2</td>
<td>20</td>
<td>7</td>
<td>13</td>
<td>50%</td>
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DISCUSSION

As a result of neural and vascular diseases, patients with diabetes have limited blood supply to maintain the integrity of the metabolic functions of the skin that protects the body. Affected tissues are generally unable to respond promptly to trauma and infection, resulting in a tendency for minor trauma of the body to be complicated by infection and induction of diabetic ulcers. Repair of diabetic ulcers require adequate blood supply and a good wound healing environment to provide adequate oxygen and necessary nutrients to the area of tissue necrosis, and also to actively create an internal environment that is relatively moist, nutritive, and promotes healing. Recent Chinese and foreign experiments and clinical application have confirmed that a dressing with modern activity that creates a relatively closed and moist environment can maintain skin moisture, speeding up wound healing by 50% compared to wound areas that are exposed to a dry environment and speeding up skin regeneration by 40% in order to retain skin moisture and facilitate skin metabolism and regeneration, thereby promoting wound healing.

As the most abundant protein in animals, collagen is closely associated with cell proliferation, differentiation, and movement. It plays a critical role in the healing of traumatic injuries and tissue reconstruction, directing epithelial cells to migrate to the affected area and stimulating cell division, while its degradation products are utilized by new cells to synthesize new collagen that fills the gap between the new cells to reduce contact inhibition of the growing cells, to provide good nutrition and to promote skin and nerve growths, thus facilitating the proliferation and repair of the epithelial cells.

The new dressing, Glycocell, facilitates lysis of necrotic tissue and fibrin. Studies have shown that covering wounds with the Glycocell dressing releases and activates endogenous collagenase to effect enzymatic debridement, while the gel constituting the dressing also dissolves fibrin. Furthermore, dissolved fibrin could, in turn, act as the chemokine for certain inflammatory cells to promote the secretion of growth factors and to speed up the healing process. Vaseline gauze and ordinary gel commonly used in the clinic do not have these properties.

Contrary to conventional belief, recent studies have found that relative hypoxia is a strong stimulant of capillary angiogenesis. The Glycocell dressing can create a closed hypoxic environment to promote angiogenesis, thereby more conducive to wound repair. The Glycocell dressing can promote the release of various growth factors and regulate their activities. It has been observed that the amount of fibroblast growth factors, epidermal growth factors and platelet-derived growth factors present in the wound exudate following the application of the new dressing was significantly higher than in the control, and the exudate can also promote the growth of cultured fibroblasts, keratinocytes and endothelial cells in vitro.

In our comparison observation, the inflammatory response was relatively milder for wounds of the same depth in the treatment group, which is associated with the slightly acidic environment provided by the Glycocell dressing. The slightly acidic environment is conducive to the action of leukocyte-mediated host phagocytes, increasing partial antimicrobial activities and directly inhibiting the growth of Staphylococcus aureus and Pseudomonas aeruginosa. Bacterial cultures of the patients' wound secretions were dominated by Staphylococcus aureus and Pseudomonas aeruginosa. The Glycocell dressing provides a slightly acidic environment that is not conducive to bacterial growth, resulting in significant bacteriostatic effect when compared to the control group, promoting wound healing. Adhesion of the fiber in conventional dressings with new tissues and exudate of the wound caused pain and re-injury of the wound, but the Glycocell dressing is transparent in color and allows observation of the wound at any time.

Studies have shown that the Glycocell dressing effects the wound healing process through multiple steps to promote wound healing to good effect. No defined side effects such as allergies and pain stimulation were observed during application. Its application in the treatment of diabetic wounds has a high value-to-price ratio, and should be promoted in the clinic.

References:
1st CASE

BACKGROUND

- Male, 73 years
- 40 years of DM history, on hypoglycemic treatment
- Scalding wound on right leg since October 25

WOUND

- Size: 2 x 2 cm, with some purulent discharge
- No odor
- Swelling, redness
- Bacteria culture: (+) Staphylococcus epidermidis

TREATMENT

- Debridement & applying GLYCOCeill® on November 10
- Dressing change on November 15
  - Wound size: 1 x 1 cm
  - No purulent discharge
  - Bacteria culture: (-) negative
  - Graduate growth: ++

2nd CASE

BACKGROUND

- Male, 45 years
- 5 years of DM history, on insulin treatment
- An abscess on skull for 2 weeks
- Wound did not heal

WOUND

- Size: 6 x 4 cm, with some purulent discharge
- No odor
- Swelling, redness & tender
- Bacteria culture: (+) Enterococcus
- Graduate Growth: +++

TREATMENT

- Debridement & applying GLYCOCeill® on October 10
- Dressing change on October 20
  - Wound size: 3 x 3.5 cm
  - No purulent discharge
  - Bacteria culture: (-) negative
  - Graduate growth: +++
3rd CASE

BACKGROUND
- Male, 45 years
- 17 years of DM history, under hypoglycemic treatment
- An abscess on left leg with pain and fever for 3 months
- Wound did not heal after debridement

WOUND
- Size: 4 x 3.5 cm, with some purulent discharge
- No odor
- Swelling, redness, tender
- Bacteria culture: (+) Staphylococcus epidermidis

TREATMENT
- Debridement & applying GLYCOcell® on December 13
- Dressing change on December 20
  - Wound size: 3.5 x 3 cm
  - Bacteria culture: (-) negative
  - Graduate growth: ++

4th CASE

BACKGROUND
- Male, 78 years
- 20 years of DM history, on hypoglycemic treatment
- Subcutaneous hematoma on left leg after injury

WOUND
- Size: 4 x 3 cm, with some purulent discharge
- No odor
- Swelling
- Bacteria culture: (+) Pseudomonas aeruginosa
- Graduate Growth: ++

TREATMENT
- Debridement & applying GLYCOcell® on October 15
- Dressing change on October 22
  - Wound size: 3.5 x 3.5 cm
  - No purulent discharge
  - Bacteria culture: (-) negative
  - Graduate growth: +++
5th CASE

BACKGROUND

- Female, 72 years
- 30 years of DM history, on hypoglycemic treatment
- An abscess between forefinger and middle finger, swelling and pain for 3 days

WOUND

- Size: 1 x 1.5 cm, with some purulent discharge
- No odor
- Swelling
- Bacteria culture: (+) Enterobacter

TREATMENT

- Debridement & applying GLYCOcell® on October 13
- Dressing change on October 20
  - Wound size: 1 x 1 cm
  - No purulent discharge
  - Bacteria culture: (-) negative
  - Graduate growth: +++

Wound healed on Nov 7

6th CASE

BACKGROUND

- Male, 58 years
- 20 years of DM history, on hypoglycemic treatment
- A Scalding wound on dorsalis pedals with swelling and pain, fever for 2 weeks
- Wound did not heal
- No improvement after infection control treatment

WOUND

- Size: 5.5 x 5 cm, with some purulent discharge
- No odor
- Swelling
- Bacteria culture: (+) Proteobacteria

TREATMENT

- Debridement & applying GLYCOcell® on October 13
- Dressing change on October 20
  - Wound size: 4.5 x 5 cm
  - No purulent discharge
  - Bacteria culture: (-) negative
  - Graduate growth: +++

Wound healed on Dec 1
7th CASE

BACKGROUND
- Male, 59 years
- 15 years of DM history, on insulin treatment for 10 years
- Cervical Fracture at V, VI
- Paraplegia caused by plump injury
- Pressure sore on sacroccygeal joint for 12 months

WOUND
- Size: 7 x 6 cm, with some pus exudates
- High superficial skin temperature, no odor
- Swelling, redness, tender
- Bacteria culture: (+) Staphylococcus aureus
- Graduate growth: ++

TREATMENT
- Debridement & applying GLYCOcell® on October 3
- Dressing change every 3 to 4 days
- On November 3
  - Wound size: 2 x 1 cm
  - No purulent exudates and inflammation sign
  - Granulation
  - Bacteria culture: (-) negative

8th CASE

BACKGROUND
- Female, 67 years
- 15 years of DM history, on hypoglycemic treatment
- Open fracture on left ankle on May 15
- Wound infection after internal fixation

WOUND
- Size: 5.1 x 4.5 cm, with large purulent discharge
- High superficial skin temperature
- Odor, swelling, redness, tender
- Bacteria culture: (+) Staphylococcus aureus
- Inflammatory graduate growth at bottom

TREATMENT
- Debridement & applying GLYCOcell® on September 21
- Dressing change on September 28
  - Wound size: 4.2 x 2 cm
  - Some purulent exudate
  - No inflammation sign
  - Bacteria culture: (-) negative
  - Granulation growth: ++
9th Case

**BACKGROUND**
- Female, 65 years
- 20 years of DM history, on hypoglycemic treatment
- Left tibial plateau fracture
- Internal fixation done on September 12
- Wound infection after operation

**WOUND**
- Size: 2.5 x 0.5 cm, with some purulent discharge
- High superficial skin temperature
- No odor, swelling, redness, tender
- Swelling
- Bacteria culture: (-) negative
- No graduate growth at bottom

**TREATMENT**
- Debridement & applying GLYCOcell® on September 18
- Dressing change on September 25
  - Wound size: 3 x 0.5 cm
  - No purulent exudates
  - Granulation growth: ++

10th Case

**BACKGROUND**
- Female, 24 years
- 2 years of DM history, on insulin treatment
- Swelling, redness and pain on left heel for 2 weeks
- No improvement after infection control treatment
- Wound did not heal after debridement

**WOUND**
- Size: 3.5 x 1 cm, with some purulent discharge
- No odor
- Swelling
- Bacteria culture: (+) Staphylococcus epidermidis

**TREATMENT**
- Debridement & applying GLYCOcell® on September 13
- Dressing change every 3 to 4 days
- On September 27
  - Wound size: 0.5 x 0.5 cm
  - No purulent exudates
  - Bacteria culture: (-) negative
  - Granulation growth: +++
11th CASE

BACKGROUND
- Male, 44 years
- Smoker
- DM II, post thrombotic syndrom
- Multiple ulcerations on right leg which did not heal

WOUND
- Size: 2.4 x 1 x 0.3 cm; 10 x 6 x 0.3 cm
- Signs of ischemia
- Swelling, redness
- Bacteria culture: (-) negative

TREATMENT
- 4 months prior treatment with Pavilon gel, Biatain and Aquacell dressings with no change of wound condition or pain relieve
- Treatment with GLYCOcell® 10x10 without adhesive edges
- Dressing change every 3rd day initially, then every 4-5 days
- After 3 month of treatment with GLYCOcell® the multiple ulcerations have improved remarkably. Healing progresses rapidly in the last month. The patient was free of pain and able to mobilize to the best of his ability.

12th CASE

BACKGROUND
- Male, 89 years
- Anticoagulant therapy
- DM II
- Traumatic skin tears with fractured left elbow

WOUND
- Size: 3 x 2 cm and 1 x 2 cm with light bleeding of the wounds
- Hematoma of surrounding area
- Swelling
- Bacteria culture: (-) negative

TREATMENT
- Cleansing of wound and applying GLYCOcell® 5x7 GEL on March 29
- Dressing change on April 2
- Wound size: 2 x 2 cm and 1 x 1 cm
- No drainage
- Wound healed on April 9
THE FULL SERVICE: OEM-PARTNER IN MEDICAL TECHNOLOGY

DESIGN › DEVELOPMENT › MANUFACTURING
THE BEST SOLUTION WITH PRODUCTS

FINEST
PRODUCT DESIGN
- Concept Visualisation
- Computer Aided Design (CAD)
- Engineering & Prototypes
- Individual Form & Function

SKILLED
RESEARCH & DEVELOPMENT TEAM
- Innovative Designers
- Experienced Engineers
- Flexible Technicians
- Interdisciplinary Specialists

PRECISE
PRODUCT & COMPONENT MANUFACTURING
- Modern CNC / CAM Technology
- Clean Room, Class ISO 8 (100,000)
- Production and Quality Management/Assurance according to EN ISO 13485:2003 and GMP
- Inhouse Injection Moulding & Tool Making

EXPERIENCED
APPLICATIONS IN MEDICAL TECHNOLOGY
- Wound Care
- Endoscopy
- Urology
- Surgery
<table>
<thead>
<tr>
<th>Product Description</th>
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<tr>
<td>GLYCOcell® SOFT SondoFIX®</td>
<td>GLYCOcell® 5x7 GEL</td>
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<td>Triangular gel dressing with slit opening and very thin &amp; breathable adhesive tape Gel-size: 6,5 x 6,5 cm 50 pieces in dispenserbox Art.-No.: WCP-02-01-314S</td>
<td>Rectangular gel wound dressing without tape Gel-size: 5 x 7 cm 50 pieces in dispenserbox Art.-No.: WCP-04-05-307G</td>
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<td>GLYCOcell® SOFT VenFIX i.v.</td>
<td>GLYCOcell® 10x10 GEL</td>
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<td>Rectangular gel dressing with slit opening and very thin &amp; breathable adhesive tape Gel-size: 3,5 x 4,5 cm 50 pieces in dispenserbox Art.-No.: WCP-04-03-314S</td>
<td>Square-shaped gel wound dressing without tape Gel-size: 10 x 10 cm 50 pieces in dispenserbox Art.-No.: WCP-04-10-310G</td>
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<td>Oval-shaped gel dressing with slit opening and very thin &amp; breathable adhesive tape Gel-size: 3 x 2 cm 50 pieces in dispenserbox Art.-No.: WCP-06-01-302S</td>
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**QUICK PRODUCT OVERVIEW**