

10. BALGRIST SYMPOSIUM ZUM DIABETISCHEN FUSS

Schwere des Infektes und Reaktion im ambulanten Setting

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BACKGROUND

- Globale Diabetesprävalenz: 10.5% 2021¹
- Diabetische Fussinfektionen: ~20%²
- Behandlung: Antibiotikatherapie + Debridement oder Chirurgie³

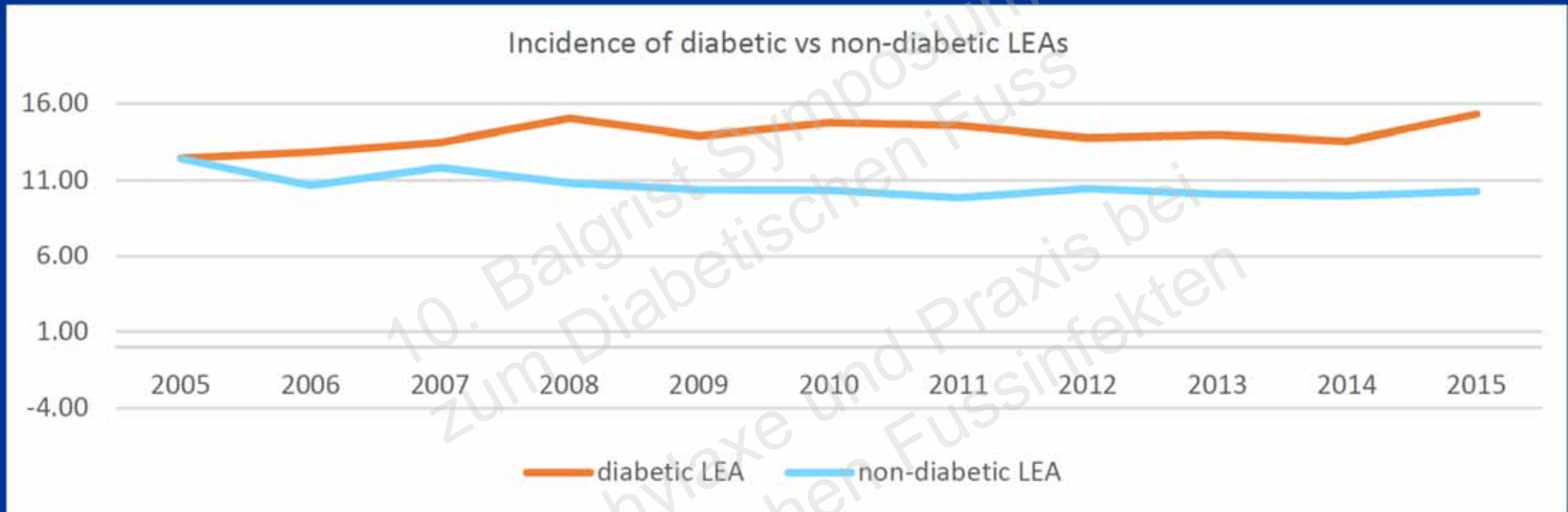


1 Sun, Diabetes Res Clin Pract 2022;183:109119

2 Armstrong, N Engl J Med 2017;15;376(24):2367-2375

3 Senneville, Clin Infect Dis 2023;doi.org/10.1093/cid/ciad527

AMPUTATIONEN DER UNTEREN EXTREMITÄT CH



Inzidenz Amputationen der unteren Extremität (LEA) pro 100.000 Einwohner der Schweiz

Jan Brtek

“Epidemiology of Lower Extremity Amputations in Switzerland from 2005 to 2015”
Doktorarbeit Universitätsklinik Balgrist unter Anleitung von
Thomas Böni und Felix Waibel

BACKGROUND



DIAGNOSTIK BEI DIABETISCHEN FUSSINFEKTEN

Empfehlung 1a. „Diagnostiziere einen diabetischen Weichteilinfekt basierend auf lokalen oder systemischen Zeichen und Entzündungszeichen.“

1. Lokale Schwellung oder Induration
2. Erythem > 0.5cm um Wunde herum
3. Lokale Schmerzen
4. Überwärmung
5. Eitrige Sekretion



DIAGNOSTIK BEI DIABETISCHEN FUSSINFEKTEN

Empfehlung 1b. „Evaluieren die Infektschwere jedweder diabetischen Fussinfektion anhand der IWGDF/IDSA Klassifikation.“

Table 1: The classification system for defining the presence and severity of an infection of the foot in a person with diabetes

Clinical classification of infection, definitions	IWGDF/IDSA classification
No systemic or local symptoms or signs of infection	1 / Uninfected
Infected: At least two of these items are present: <ul style="list-style-type: none">• Local swelling or induration• Erythema > 0.5 but < 2 cm² around the wound• Local tenderness or pain• Local increased warmth• Purulent discharge And, no other cause of an inflammatory response of the skin (e.g., trauma, gout, acute Charcot neuro-arthropathy, fracture, thrombosis, or venous stasis)	2 / Mild
Infection with no systemic manifestations and involving: <ul style="list-style-type: none">• erythema extending ≥ 2 cm² from the wound margin, and/or• tissue deeper than skin and subcutaneous tissues (e.g., tendon, muscle, joint, and bone)	3 / Moderate
Infection involving bone (osteomyelitis)	Add "(O)"
Any foot infection with associated systemic manifestations (of the systemic inflammatory response syndrome [SIRS]), as manifested by ≥ 2 of the following: <ul style="list-style-type: none">• temperature > 38°C or < 36°C• heart rate > 90 beats/min• respiratory rate > 20 breaths/min, or• PaCO₂ < 4.3 kPa (32 mmHg)• white blood cell count > 12,000/mm³, or < 4,000/mm³, or > 10% immature (band) forms	4 / Severe
Infection involving bone (osteomyelitis)	Add "(O)"

Note: The presence of clinically significant foot ischaemia makes both diagnosis and treatment of infection considerably more difficult.

* infection refers to any part of the foot, not just of a wound or an ulcer.

† In any direction, from the rim of the wound.

* If osteomyelitis is demonstrated in the absence of ≥ 2 signs/symptoms of local or systemic inflammation, classify the foot as either grade 3(O) (if < 2 SIRS criteria) or grade 4(O) (if ≥ 2 SIRS criteria) (see text).



INFEKTSCHWERE I

Clinical classification of infection, definitions

IWGDF/IDSA classification

No systemic or local symptoms or signs of infection

I / Uninfected



INFEKTSCHWERE II

Infected: At least two of these items are present:

2 / Mild

- Local swelling or induration
- Erythema > 0.5 but < 2 cm^b around the wound
- Local tenderness or pain
- Local increased warmth
- Purulent discharge

And, no other cause of an inflammatory response of the skin (e.g., trauma, gout, acute Charcot neuro-arthropathy, fracture, thrombosis, or venous stasis)



INFEKTSCHWERE III

Infection with no systemic manifestations and involving:

3 / Moderate

- erythema extending ≥ 2 cm from the wound margin, and/or
- tissue deeper than skin and subcutaneous tissues (e.g., tendon, muscle, joint, and bone)

Infection involving bone (osteomyelitis)

Add "(O)"



INFEKTSCHWERE IV

Any foot infection with associated systemic manifestations (of the systemic inflammatory response syndrome [SIRS]), as manifested by ≥ 2 of the following:

- temperature, $> 38^{\circ}\text{C}$ or $< 36^{\circ}\text{C}$
- heart rate, > 90 beats/min
- respiratory rate, > 20 breaths/min, or $\text{PaCO}_2 < 4.3$ kPa (32 mmHg)
- white blood cell count $> 12,000/\text{mm}^3$, or $\leq 4\text{G/L}$, or $> 10\%$ immature (band) forms

Infection involving bone (osteomyelitis)

4 / Severe



Add "(O)"

INFEKTSCHWERE / HOSPITALISATION

- Infection with no systemic manifestations (see below) involving
- only the skin or subcutaneous tissue (not any deeper tissues), and
- any erythema present does not extend $>2\text{ cm}^b$ around the wound

2 (mild infection)

Ambulantes Management

- Infection with no systemic manifestations and involving
- erythema extending $\geq 2\text{ cm}^a$ from the wound margin, *and/or*
- tissue deeper than skin and subcutaneous tissues (eg, tendon, muscle, joint, and bone,)

3 (moderate infection)

Stationäres Management bei schweren Begleiterkrankungen (Schwere PAVK, Niereninsuffizienz, Immunsuppression)

- Any foot infection with associated systemic manifestations (of the systemic inflammatory response syndrome [SIRS]), as manifested by ≥ 2 of the following:
- Temperature, $>38^\circ\text{C}$ or $<36^\circ\text{C}$
- Heart rate, >90 beats/min
- Respiratory rate, >20 breaths/min or $\text{PaCO}_2 < 4.3\text{ kPa}$ (32 mmHg)
- White blood cell count $>12\,000/\text{mm}^3$, or $<4000/\text{mm}^3$, or $>10\%$ immature (band) forms

4 (severe infection)

Stationäres Management

REAKTION IM AMBULANTEN SETTING?

3 Kernfragen:

- Erythemausdehnung $> 2\text{cm}$?
- Tiefenbestimmung: Tiefer als Cutis/Subcutis?
- SIRS Zeichen (Temperatur $< 36^\circ$ oder $> 38^\circ$; Puls $> 90/\text{min}$; Atemfrequenz $> 20/\text{min}$)?



REAKTION IM AMBULANTEN SETTING?

- 1.-3. "Nein"? **Mild!**
Kontaktaufnahme Netzwerk für Beurteilung innert 24h!
- 1. und 2. "Ja", 3. "Nein"? **Moderat!**
Kontaktaufnahme Netzwerk für Beurteilung gleichentags!
- 3. "Ja"? **Schwer!**
Sofort auf Notfallstation.



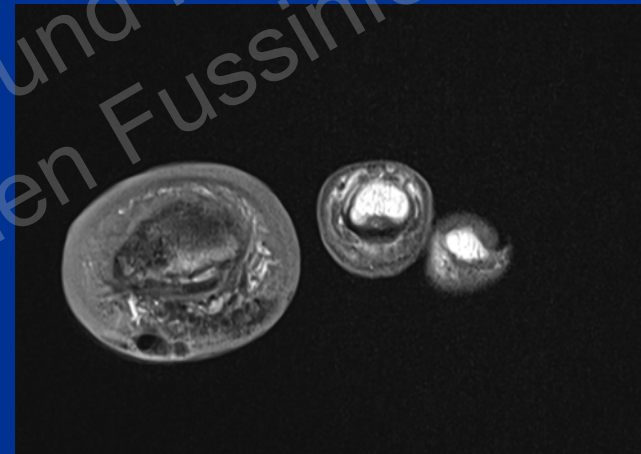
Kernfragen

1. Erythemausdehnung > 2cm?
2. Tiefenbestimmung: Tiefer als Cutis/Subcutis?
3. SIRS Zeichen (Temperatur <math>< 36^\circ</math> oder > 38°; Puls > 90/min; Atemfrequenz > 20/min)?

FEBRUAR 2023, 22:00, MÄNNL. DIABETIKER



FEBRUAR 2023, 22 Uhr, MÄNNL. DIABETIKER



FEBRUAR 2023, 22:00, MÄNNL. DIABETIKER

- Temperatur 39° Celsius
- Puls 133/min
- Leukozytose 16 G/L

= 3 SIRS Kriterien

Schwerer Infekt: Aufnahme
und sofortige Operation



FEBRUAR 2023, 22 Uhr, MÄNNL. DIABETIKER



ZUSAMMENFASSUNG

- **Infektschwere: Einteilung in "Mild", "Moderat" und "Schwer" nach**
 - Ausdehnung Erythem (< oder > 2cm)
 - Wundtiefe (Cutis/Subcutis vs. tiefere Strukturen)
 - Vorliegen ≥ 2 SIRS Zeichen
- **"Mild" / "Moderat" ohne Risikofaktoren (RF): ambulantes Management**
- **"Moderat" mit RF und "Schwer": stationäres Management**
- **Ambulant: Mit einfachen Mitteln Infektschwere ermitteln + entsprechend dringliche Zuweisung ins Netzwerk**

VIELEN DANK

