INFECTIOUS COMPLICATIONS OF LYMPHEDEMA

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Erysipelas is frequent in Lymphedema

Frequency 30-50%

Tours 31%

Carpentier 4-5% / year

Pereira de Godoy 4.5% in 12.3 months
Diagnosis is made by practitioner

Symptoms

ACUTE INFLAMMATION following FEVER / CHILLS / "MALAISE"
CELLULITIS and LYMPHEDEMA

**Differential diagnosis**

- Cellulitis due to *Pseudomonas aeruginosa*
- Superficial Phlebitis
- Lymphatic Stasis
Erysipelas are due to Streptococci

Only one bacteria has demonstrated its causal relationship with erysipelas

β-hemolytic streptococcus (A, B, C, G and dysgalactiae)
Treatment of erysipelas is oral antibiotics

- Antistreptococcal Antibiotics
  - Amoxicillin per os: 3-4.5g/d
  - Pristinamycine per os: 3g/d
    (P Bernard, O Chosidow, L Vaillant BMJ 2002)

- Hospitalization
  only for severe cases

- Adjuvants Treatments?
  No anticoagulants,
  no antiinflammatory drugs,
  no local treatments!
Infectious complications : treatment ?

Erysipelas *(P Bernard et al BMJ 2002)*

- **Méthodologie**
  - Randomized, open, noninferiority
    - Pristinamycine 3g/d vs
    - Pénicilline IV 18M/d puis Oracilline 6M/d
    - During 14d, Follow-up 28d

- **Results**
  - **Results (intention to treat)**
    - Pristinamycine (n=138) 65% follow-up (74% end of treatment)
    - Pénicilline (n=150) 53% follow-up (63% end of treatment)
Recurrences of Cellulitis in Lymphedema are usual

Frequency 30 to 54%
Jorup-Röstrom 1984, Pavlotsky 2004

Tunisia 20% (Ben Salah, breast cancer)
Morocco 12% (Amal) at 6 months and 30% at 3 years

Recurrences are more frequent when attacks are close
(26% at 1 year even if antibioprophylaxy S Vignes)
To prevent recurrences of cellulitis

Expert consensus (Földi, Yasuhara, Brorson)

- Reduction of lymphedema volume
  reduce number and severity of erysipelas recurrences
- Contention - Compression
  reduces erysipelas recurrences
  5% vs 25% in a non-randomized controlled study (Yasuhara 1996)

To Treat Lymphedema
is the most important treatment to avoid recurrences of erysipelas

+++ Complex Physical Therapy
To prevent recurrences of cellulitis

PROPHYLACTIC ANTIBIOTIC TREATMENT

- Penicillin after > 2 crises  NEJM 2013

- Prospective randomized study vs placebo
  (274 lower limb, no lymphedema)

- Treatment Pénicillin V, 250 mg (or 200 000 UI) x2/d, 12 months

- Results at 12 months: 22% vs 37% recurrences p=0.01

- Results  Median deadline recurrence: 626 days vs 532 days

Treatment by oral Pénicilline during 12 months

Results: Efficiency during prophylactic antibiotic treatment
(5 handled patients, 1 erysipelas avoided)

But disappearance of the protective effect in the stop penicillin
(rate of recurrences is identical 27%)

Predictive factors of prophylactic failure:
>3 erysipelas, BMI>33 (p<0.01), and pre-existent oedema (p=0.06)
To prevent recurrences of cellulitis

Don't forget INTERTRIGO

- Athletic foot is very frequent in case of Lower Limb Lymphedema
- Mycotic Intertrigos is an important risk factor for recurrence (Same causes, same outcomes)

Treatment: Topical therapy with imidazoles or Mycoster*

Results:
- Efficiency > 95%

Recurrences:
- Very frequent
- Life long treatment often needed
The main risk factor of Erysipelas is Lymphedema

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphedema</td>
<td>71,2</td>
<td>5,6 - 91</td>
</tr>
<tr>
<td>Portal of entry</td>
<td>23,8</td>
<td>10 - 52</td>
</tr>
<tr>
<td>Lower limb oedema</td>
<td>2,5</td>
<td>1,2 - 5,1</td>
</tr>
<tr>
<td>Venous insufficiency</td>
<td>2,9</td>
<td>1,0 - 8,7</td>
</tr>
<tr>
<td>Obesity</td>
<td>2</td>
<td>1,1 - 3,7</td>
</tr>
</tbody>
</table>

Lymphoscintigraphy and Cellulitis
The main risk factor of Lymphedema is Erysipelas

AFTER BREAST CANCER

Soran et al, Am J Clin Oncol 2011
Upper Limb Lymphedema after breast cancer

**Risk Factors** and occurring of Lymphedema

- BMI<25 + 0 infection + low use of the hand: 6.8%
- BMI>25 + *infection* + high use of the hand: 46.3%
Lymphatic Insufficiency and Cellulitis

The "chicken-and-egg" situation

Lymphatic abnormalities after Cellulitis

Involved limb
De Godoy (2000) 77% (lymphoscinti, after >2 attacks)
Damstra (2008) 82% (lymphoscinti, after 1 attack)
Soo (2008) 86% (lymphoscinti, after 1 attack)

Controlateral non-involved limb (after erysipelas)
Stöberl (1987) : 54% (lymphography)
Damstra (2008) : 68% (lymphoscinti)
Soo (2008) : 53% (lymphoscinti)
Lymphatic Insufficiency and Cellulitis

The "chicken-and-egg" situation

Damstra RJ et al BJD 2008

Methods

40 Erysipelas, 39.3 years, 28 M et 12 F
Bilateral lymphoscinti, 4 months after erysipelas one leg
Assessment criterion: uptake after 2 hours inguinal crease
N > 20%; Abnormal < 15%

Results

Affect limb 9.6±8.5%, contralateral limb 12.1±8.9%
Affect limb <15% : 33 (82%)
Non affect limb <15% : 27 (67%) whose 26 both limbs
Good correlation uptakes 2 limbs (r = 0.81)
Thank you for your attention