Surgical Antimicrobial Prophylaxis in the Netherlands

Inge C. Gyssens
Healthcare Budget system in Dutch hospitals

introduced in 1983

budgets originally based on consumption of resources of the previous year

the government has limited hospital costs in an external budget

drug costs for inpatients generate no revenues
Tu es sur la liste d’attente !
Complete Evaluation of Surgical Prophylaxis in University Hospital N, 1992

<table>
<thead>
<tr>
<th></th>
<th>Before intervention</th>
<th>After intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of operations</strong></td>
<td>258</td>
<td>262</td>
</tr>
<tr>
<td><strong>Prophylaxis administered</strong></td>
<td>31%</td>
<td>37%</td>
</tr>
<tr>
<td><strong>Prophylaxis incorrect</strong></td>
<td>23%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Duration &gt; 24 hours</strong></td>
<td>25%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Single Dose</strong></td>
<td>20%</td>
<td>78%</td>
</tr>
<tr>
<td><strong>Timing optimal</strong></td>
<td>34%</td>
<td>62%</td>
</tr>
</tbody>
</table>

Gyssens et al. JAC 1996;38:1001-12
Intervention on
Timing of Prophylaxis

University Hospital N
1992

Gyssens et al. JAC 1996;
Surgical prophylaxis (national guideline 2000)

- cefazolin 1g (+ metronidazole)
- single dose
- within 30 min before incision
Use of First Generation Cephalosporins
DDD/100 patient days
Erasmus MC, 1999-2002
Cefazolin is restricted to prophylactic use in surgery in University Hospital R, 2001

<table>
<thead>
<tr>
<th>department</th>
<th>cefazolin use (g)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>operating theatres</td>
<td>4266</td>
<td>64</td>
</tr>
<tr>
<td>postop ICU</td>
<td>1507</td>
<td>23</td>
</tr>
<tr>
<td>surgical wards</td>
<td>716</td>
<td>10</td>
</tr>
<tr>
<td>medical wards</td>
<td>208</td>
<td>3</td>
</tr>
<tr>
<td>total</td>
<td>6697</td>
<td>100</td>
</tr>
</tbody>
</table>
Use of cephalosporins in surgical departments
University Hospital R, DDD/100 patient days

- sec. gen cephalosporins
- first gen cephalosporins (SMOOTH)
- sec. gen cephalosporins (SMOOTH)
- first generation cephalosporins
Intervention study on Surgical Prophylaxis  
The **CHIPS** study in The Netherlands

**EDUCATIONAL INTERVENTION:**
- feedback of quality-of-use review
- national guidelines:

  ![SWAB logo]

- support of outcome data:
  surgical wound infections SSI
Postoperative wound infections (SSI)
CHIPS
n = 13
hospitals

n = 63
hospitals
CHIPS pre-intervention: 1763 procedures

Elective procedures for which prophylaxis is indicated

- **clean:**
  - total hip implantation
  - reconstruction of the aorta
  - femoropopliteal bypass
  - n = 1114

- **clean contaminated:**
  - vaginal hysterectomy
  - abdominal hysterectomy
  - colon resection and low-anterior resection
  - n = 649
CHIPS pre-intervention 2000, Choice of agent

Correct choice of agent
Alternative agent more appropriate
CHIPS pre-intervention 2000

Intestinal surgery
- 92%

Orthopedic surgery
- 81%

Gynaecological surgery
- 98%

Vascular surgery
- 87%

Duration of Prophylaxis:
- correct
- too long
- too short
CHIPS pre-intervention 2000, Timing

- Timing optimal: 50%
- Timing suboptim.: 27%
- Timing too late: 22%
- Timing too early: 5%
Timing in prophylaxis is the Achilles heel
CHIPS pre-intervention: Timing of prophylaxis

- Orthopedic surgery: n = 890
- Vascular surgery: n = 158
- Gynaecological surgery: n = 350
- Intestinal surgery: n = 221
Conclusion:

There seems to be no major overconsumption of surgical prophylaxis in the Netherlands.

Where indicated, prophylaxis is virtually not omitted.

Quality of surgical prophylaxis in the Netherlands is favourable, but there is still room for improvement.