The Incidence of Infective Endocarditis in England is Increasing


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Invasive dental procedure

Viridans streptococci released into circulation

IE develops in susceptible individuals
Antibiotic Prophylaxis (AP)
Invasive dental procedure
Circulating viridans streptococci reduced
Presumed reduced risk of IE
Historical Perspective

- 1955: First AHA Guidelines on AP

- Successive guidelines have tended to recommend:
  - Smaller doses of antibiotics given for a shorter time
  - That fewer patients regarded as being at risk of IE
  - Fewer invasive procedures covered

- Increasing controversy over time

- No randomized trial of AP
Prophylaxis against infective endocarditis

Antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures

Issued: March 2008

NICE clinical guideline 64
guidance.nice.org.uk/cg64
1.1.3 Antibiotic prophylaxis against infective endocarditis is **not** recommended:

- For people undergoing dental procedures
- For people undergoing non-dental procedures at the following sites:
  - Upper and lower gastrointestinal tract
  - Genitourinary tract
  - Upper and lower respiratory tract
Funded opportunity to study the impact of stopping antibiotic prophylaxis at a national level
Methodology

• England only - ~ 50m

• All prescriptions for single doses of amoxicillin 3g or clindamycin 600mg
• Jan 1\textsuperscript{st} 2004 – March 31\textsuperscript{st} 2013

• Patients discharged from English hospitals with a primary diagnosis of infective endocarditis
• Jan 1\textsuperscript{st} 2000 – March 31\textsuperscript{st} 2013
• Superspells

• 19,804 cases in total
Antibiotic Prophylaxis Prescribing Data

Number of Prescriptions of Amoxicillin 3g or Clindamycin 600mg

Average pre: 10,900

Reduction: 88%, p<0.001

NICE guidelines
Incidence of Infective Endocarditis Cases (Superspells) and Deaths / 10 Million / Month
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Incidence of IE
After NICE there was a significant increase in the number of IE cases/month above the previous trend (0.11 cases/10 million/month, CI 0.05-0.16, p<0.0001).

By March 2013 this amounted to an extra:
- 35 IE cases/month
Change Point Analysis

Incidence of Infective Endocarditis Cases (Superspells) / 10 Million / Month

Change Point June 2008
In-Patient Mortality

A potential, but not significant, extra:
- 1.5 IE deaths/month or
- 18 IE deaths/year
Highest and Lower Risk

Incidence of Infective Endocarditis Cases (Superspells) / 10 Million / Month
Conclusions

• Five years post NICE there has been:
  – a large and significant fall in AP prescribing
  – a significant increase in the incidence of IE

• Individuals affected include highest risk and lower risk individuals

• Although there is a temporal association, we cannot conclude there is a cause-effect relationship

• Need for a prospective RCT
In Addition

NICE have issued a press release to say that they will undertake an immediate review of their guidance.

There are no recommendations for a change in practice at present.

The study has just been published by the Lancet:
http://dx.doi.org/10.1016/S0140-6736(14)62007-9
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