Solving Antibacterial Resistance

David Cole-Hamilton
President EuCheMS

Thanks to:
STOA
Paul Rubig MEP
Nineta Majcen
Bruno Vilela
Blood poisoning (Sepsis)

Cut → Infection → Sepsis → Death from Sepsis

>6 M cases per year

Cure

Antibiotics

Antibiotic resistance

Cure

Alexander Ernst Fleming 1928
Howard Florey 1940

Physiology and Medicine 1945
Warning issued over strain of ‘super-gonorrhoea’

Only one antibiotic effective, says research

BY LOUISE BUCHAN
Health Correspondent

Senior medics have raised concerns about running out of antibiotics for a highly resistant strain of ‘super-gonorrhoea’ that has spread across parts of the UK.

Public health watchdogs warned yesterday that a virulent strain of the sexually transmitted disease had been found in the West Midlands and the south east of England, following a major outbreak in the north of England last year.

The strain is resistant to an antibiotic called azithromycin and doctors are warning that a second drug, cefixime, should be used as a second line treatment.

A highly resistant strain of gonorrhoea, only treatable with the drug cefixime, has been reported, according to Public Health England, which passed the warning to NHS England, which said: “It is not currently clear whether there is a change in the epidemiology of drug resistant gonorrhoea.

There are no other effective, non-steroidal drugs to tackle the strain, so patients could become unwell and be at risk of developing resistance.

Chancellor George Osborne warned last week that antibiotics were becoming a greater threat to human health than cancer and used his speech to warn of the growing problem.

Scottish public health leaders are monitoring the outbreak and have urged people to take precautions with new risks.

Dr Amanda Friedland of Public Health England, which passed the warning to NHS England, said: “There are several risk factors for developing resistance to antibiotics, including recent history of exposure to the same or similar organisms, prior treatment with the same or similar organisms, or exposure to organisms that have been treated with similar or identical antibiotics.

There have been 34 confirmed cases since November 2014, she said.

Hugh Fearnley, a consultant in bacteriology at Aberdeen University, said the strain was a major public health concern. “Gonorrhoea is the new HIV and I am more concerned about it than ever,” he said.

Antibiotics have been the mainstay of treatment for patients, but not for much longer. We are now seeing the beginning of resistance to antibiotics.

It is better to prevent the spread of sexually transmitted superbugs than hospital acquired infections, he added.

A Health Protection Scotland spokesperson said: “We continue to support and work to minimise the risk of multidrug resistant bacteria to the population.”

Health officials are monitoring the ‘super-gonorrhoea’ strain.

FULL STORY, PAGE 11
Causes of antibiotic resistance

• Natural evolution
• Over-prescription
  – Doctors prescribed when not required
• Unfinished courses
  – Surviving bacteria more resistant to drug
• Abuse in agriculture
  – Growth promotion (banned EU, 2006)
  – Disease prevention (banned EU, 2011)

Needs legislation on advertising
Major advertising effects
What can Europe do?

- Enforce legislation on agricultural processes and imports
- Major publicity campaign (over prescription, completing doses)

Research
- Better understand mechanism of resistance
- Understand spread of resistance between species
- Better, earlier diagnosis → appropriate treatment
- New treatments
- New antibiotics
Proposed European response to AMR

Return on investment
New antibiotic  -$50M  Musculoskeletal drug  ~$1 bn

EU Funding
• Network of Centres throughout Europe (Alderey Park, UK)
• Individual groups with good new ideas
Horizon 2020
All working together and sharing results