

Invasive Group A Streptococcal Disease in Ireland, 2005

Key points

- **Incidence of iGAS in Ireland in 2005 was 1.25/100,000, lower than most EU countries with consistent data but higher than 2004 rate in Ireland**
- **Bacteraemia was common clinical feature. Necrotising fasciitis, streptococcal toxic shock syndrome, and other invasive conditions were also reported**
- **Cluster of cases noted in early-2005 in HSE-W**
- **Multidisciplinary sub-committee produced guidelines on iGAS Diagnosis, Management and Surveillance. Recommendations included need for enhanced surveillance of iGAS in Ireland**

Introduction

Group A Streptococcal disease (GAS) covers a wide range of illnesses from pharyngitis and scarlet fever, to more severe invasive illnesses such as necrotising fasciitis. Invasive Group A Streptococcal diseases (iGAS) are infections associated with the isolation of *Streptococcus pyogenes* from normally sterile body sites, and carry significant risk of mortality. Clinical features of iGAS are: streptococcal toxic shock syndrome (STSS) which can result in multi-organ system failure early in the course of the illness; necrotising fasciitis (NF) characterised by extensive local necrosis of subcutaneous soft tissues and skin; and other syndromes such as bacteraemia, meningitis, pneumonia, peritonitis, myositis, septic arthritis, puerperal sepsis, cellulitis, osteomyelitis and surgical wound infections.¹

Worldwide, cases of iGAS rose during the 1980s and 1990s but the rates have since stabilised and remain around 3.8/100,000 in recent years in the United Kingdom (UK) and other European countries with adequate surveillance.² The epidemiology of iGAS in Ireland was unknown until 2004 when the disease became notifiable. There were 35 notifications in 2004 (0.89/100,000). The HPSC Scientific Advisory Committee set up a multidisciplinary sub-committee in mid-2005 to produce guidelines on the Detection, Surveillance and Management of iGAS Infections in Ireland. The recommendations were published in 2006.

Table 1. Clinical features of cases in 2005

Clinical Feature	Number of cases
STSS, Cellulitis	1
NF	2
NF, Bacteraemia	1
Bacteraemia	4
Bacteraemia, Cellulitis	3
Bacteraemia, Osteomyelitis	1
Cellulitis	2
Meningitis	1
Pneumonia	1
Peritonitis	1
Septic Arthritis	1
Others (both abscess)	2
Unknown	8

Table 2. Sex and age-group distribution of iGAS cases for 2004 and 2005 combined

Age group (years)	Females	Males	Totals (%)
<1 yrs	2	0	2 (2)
1-4 yrs	4	2	6 (7)
5-9 yrs	2	3	5 (6)
10-14 yrs	1	1	2 (2)
15-19 yrs	0	4	4 (5)
20-24 yrs	1	2	3 (4)
25-34 yrs	5	7	12 (14)
35-44 yrs	4	4	8 (10)
45-54 yrs	0	3	3 (4)
55-64 yrs	7	3	10 (12)
65+ yrs	14	14	28 (33)
Unknown	0	1	1 (1)
Total	40	44	84

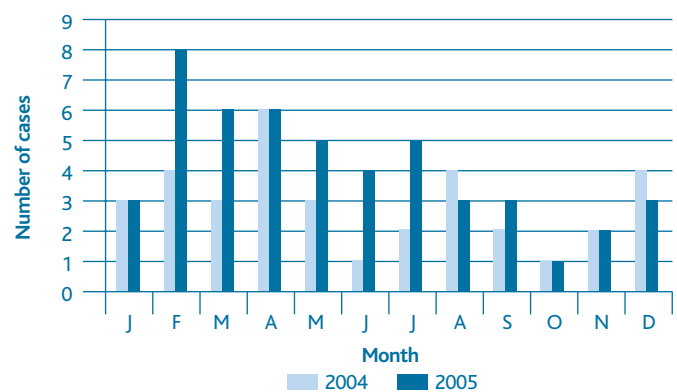


Figure 1. Notified cases of iGAS by month 2004 and 2005.

Method

Reports of iGAS cases in Ireland in 2005 on CIDR were analysed at the HPSC.³ Additional information was available on some cases for which microbiology laboratories and Departments of Public Health completed enhanced surveillance forms. Rates were calculated using the 2002 Census of Population.

Results

In Ireland there were 49 cases (1.25/100,000) of iGAS notified in 2005, a rise on the 35 cases (0.89/100,000) in 2004. There were more cases reported in February and March of 2005 than in those months in 2004 (Figure 1). This was due to a temporal and geographic clustering of cases of iGAS noted in HSE-W (Figure 2). Typing data were available for 13 of the 17 isolates in the cluster. Serotype M-1 (six isolates), M-12 (two isolates), M-87 (two isolates) and one isolate each of M-3, M-5 and M-28 were reported. No epidemiological link was established among the cases.

Enhanced surveillance forms were returned for 28 of the 49 cases in 2005 (table 1). There were three cases with NF (one with bacteraemia) and one case of STSS (with cellulitis). In all, there were nine cases of bacteraemia with or without a focus. Clinical presentation for eight of the cases was unknown.

Age and sex breakdown for the two years, 2004 and 2005, combined (Figure 3. and table 2.) showed that all age groups

were affected but the incidence was higher among the very young and the elderly; 33% of all infections occurred in the age-group 65 years or over. Overall, slightly more males (52%) were affected than females.

No national-level data on antibiotic-resistance profiles of the *Streptococcus pyogenes* isolates associated with invasive disease were available.

Discussion

The rise in 2005 of cases of iGAS over 2004 was largely due to an increase of cases reported in HSE-W, where 18 cases were reported in 2005 while none were seen in 2004 in that region. Most of the cases in HSE-W occurred in February and March but there was a wide distribution of serotypes among the cases in the cluster. The serotypes were those commonly recorded internationally. Furthermore, the cases were not epidemiologically linked and thus the cluster did not constitute a single outbreak of iGAS.

The crude incidence rate for iGAS in Ireland in 2005 was 1.25/100,000. This is much lower than the rate reported in recent years in the UK and other European countries (3.8/100,000). It is possible that there is under-reporting of cases, or that there is an actual low rate in Ireland. In either situation, it is important to collect timely and detailed information on each episode of the disease.

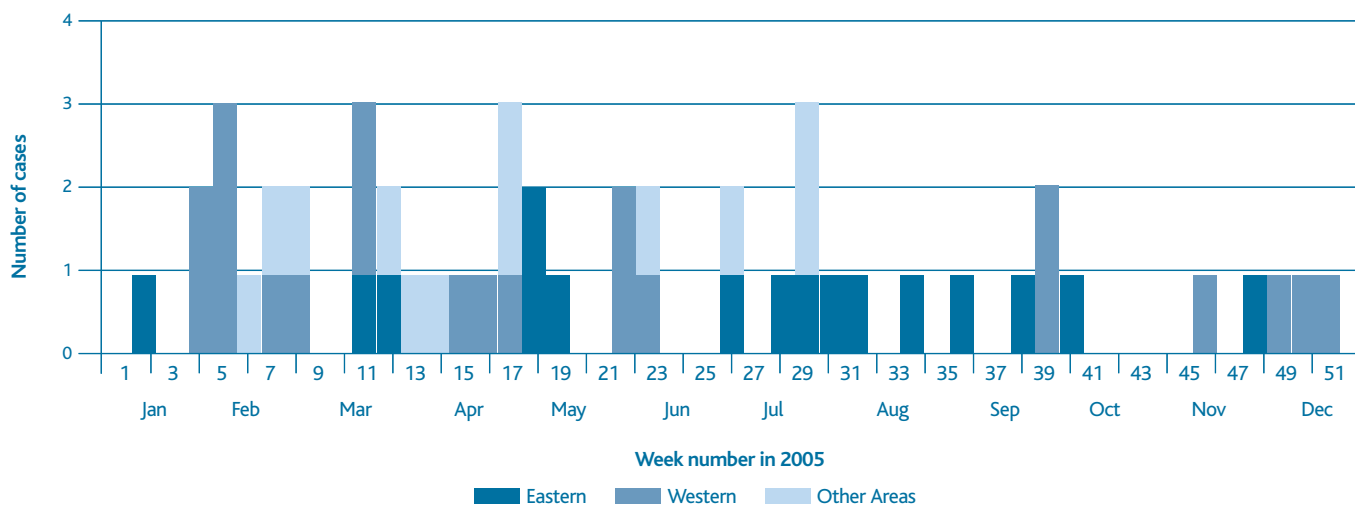


Figure 2. Epidemic curve for 2005 showing number of cases occurring in the Eastern and Western HSE-Health Areas

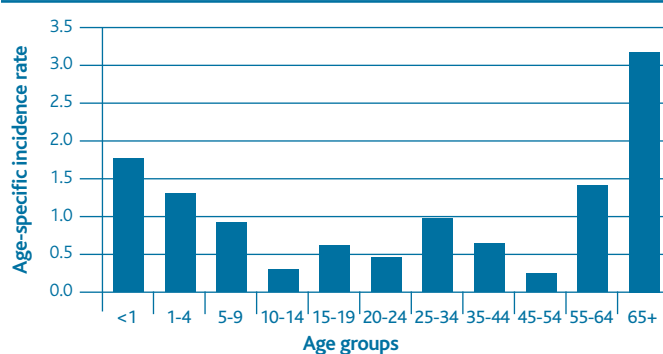


Figure 3. Age-specific incidence rate (per 100,000) of iGAS cases for 2004 and 2005 combined

Enhanced surveillance data were received for only two-thirds of the cases in 2005, and most of the fields were marked as “unknown”. The HPSC iGAS sub-committee is due to publish its report in 2006. Included in the document will be a recommendation that enhanced surveillance questions, which are available on a form from the HSPC website and which will be on CIDR in late-2006, are completed. Further recommendations include strain typing and antimicrobial-resistance monitoring of all of the iGAS bacterial isolates. Adherence to these along with recommendations on disease management in the report should provide a clearer epidemiological picture and help to control iGAS.

Acknowledgements

HSPC wish to thank all involved in the surveillance of iGAS in Ireland. Special thanks to those in HSE-W for providing more detailed epidemiological data.

References

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