

2.3 Invasive Group A Streptococcal Disease

Summary

Number of cases, 2007: 57

Crude incidence rate, 2007: 1.3 per 100,000 population

Notifications

There were 57 cases (1.3 cases per 100,000 population) of invasive Group A streptococcal (iGAS) disease notified in 2007, compared to 61 cases (1.4 per 100,000) in 2006. All 57 cases in 2007 were confirmed, defined as patients with group A *Streptococcus* (GAS), or *Streptococcus pyogenes*, isolated from a sterile site.

Patient demographics

Of the 57 cases, 26 (46%) were males and 31 (54%) were females. The age and sex specific rates of iGAS cases are shown in Figure 1. Children aged up to 4 years and adults aged over 65 years were most affected with smaller peaks in females aged 25-34 years and males aged 35-44 years.

Geographic spread and seasonal variation

Table 1 outlines the numbers and crude incidence rates (CIRs) of iGAS disease by HSE area from 2004-2007. Of note, the highest number of cases in 2007 occurred in the HSE-E (n=28) and the highest CIR in the HSE-SE (2.2 per 100,000 population).

Although the numbers of iGAS cases notified to date have been low and it is not possible to discern any distinct seasonal variation, the months with the highest

numbers of notifications for each of the four years of surveillance have been either February, March or April (data not shown).

Enhanced data

Enhanced data fields were entered for 40 (70%) of the 57 cases reported in 2007. Fifteen laboratories were identified as the source for 39 cases.

Isolate details

GAS was isolated from a sterile site from 33 of 40 cases for which enhanced data were available, primarily from blood cultures (30, or 91%) but also joint, bone and deep tissue (one isolate each).

No serological typing data, based on the detection of M and T-proteins, were available. This may be due to the absence of a streptococcal reference laboratory in this country and thus laboratories are required to send their isolates to reference facilities abroad.

Clinical details

As in 2006, bacteraemia (32 cases) and cellulitis (10) were the most common clinical presentations, followed by pneumonia (6), streptococcal toxic shock syndrome (STSS) (5), necrotising fasciitis (2), puerperal sepsis (2), peritonitis (1) and myositis (1). Note that cases could have more than one clinical presentation. The following clinical syndromes were associated with 34 cases for which data on clinical presentation were provided:

- bacteraemia, myositis, necrotising fasciitis and STSS (1)
- bacteraemia, pneumonia, necrotising fasciitis and STSS (1)

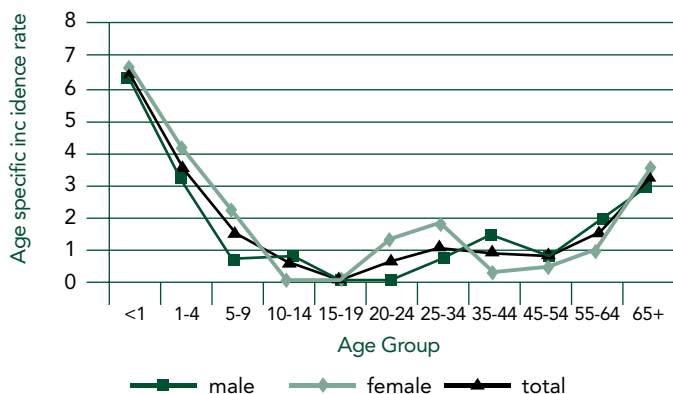


Figure 1. Age and sex specific rates of iGAS disease in 2007

- bacteraemia, cellulitis and STSS (2)
- bacteraemia, pneumonia and STSS (1)
- bacteraemia and cellulitis (7)
- bacteraemia and pneumonia (4)
- bacteraemia and puerperal sepsis (1)
- cellulitis (1)
- peritonitis and puerperal sepsis (1)
- bacteraemia without a focus (15)

Risk factors

Risk factors associated with iGAS disease included: skin and wound lesions (11 cases), age over 65 years (14), intravenous drug use (IVDU) (5), steroid use (2), alcoholism (2), malignancy (2), non-steroidal anti-inflammatory drugs (1) and varicella infection (1). Note that cases could have one or more associated risk factors. No risk factors were identified for 9 cases. Among the five cases with STSS, IVDU was identified as a risk factor in two cases, alcoholism in one and skin lesions in three. No risk factors were identified for two cases.

Clinical management

Surgical intervention was required for two patients and admission to the intensive care unit for five patients.

Other epidemiological information

None of the cases were hospital-acquired. No outbreaks were identified in 2007.

Outcome

Outcome at 7-days following GAS isolation was reported for 26 cases: 21 were still alive, four died due to iGAS (ages 65, 82, 84 and 90 years) and one died due

to an unknown cause (age 72 years). The case fatality rate (CFR) for outcome reported at 7-days was 19%. Of the five STSS cases, three died resulting in a CFR of 60%.

Conclusion

The number of cases notified in Ireland is low compared to other Northern European countries and the US. Data reported to the Strep-Euro Program for 2003 and 2004 showed that the highest rates of iGAS disease were in Northern Europe with age-standardised rates of 3.31, 3.10, 2.58 and 2.46 per 100,000 population in the UK, Sweden, Denmark and Finland, respectively. The estimated rate of iGAS disease in the US in 2007 [provisional data from CDC's Active Bacterial Core Surveillance (ABCS) Program] was 3.75 per 100,000 population while the mortality rate was 0.43. Certain serotypes of GAS are more virulent than others, e.g. serotypes M1 and M3, but with the absence of a streptococcal reference laboratory in this country, no serological typing data were available. While enhanced data were available for 70% of cases, improved completion of the enhanced questionnaire for all cases will further augment our understanding of iGAS disease in Ireland.

The figures presented in this summary are based on data extracted from the Computerised Infectious Diseases Reporting (CIDR) System on 22nd August 2008.

Further information on iGAS disease in Ireland is available at: www.ndsc.ie/hpsc/A-Z/Other/GroupAStreptococcalDiseaseGAS/

Table 1. Numbers (n) and Crude Incidence Rates (CIRs) per 100,000 population of iGAS disease by HSE Area, 2004-2007

HSE Area	2004		2005		2006		2007	
	n	CIR	n	CIR	n	CIR	n	CIR
HSE-E	25	1.7	19	1.3	37	2.5	28	1.9
HSE-M	0	0.0	1	0.4	2	0.8	0	0.0
HSE-MW	1	0.3	3	0.8	2	0.6	2	0.6
HSE-NE	1	0.3	3	0.8	5	1.3	3	0.8
HSE-NW	0	0.0	3	1.3	1	0.4	3	1.3
HSE-SE	7	1.5	1	0.2	4	0.9	10	2.2
HSE-S	1	0.2	1	0.2	3	0.5	4	0.6
HSE-W	0	0.0	18	4.3	7	1.7	7	1.7
IRELAND	35	0.8	49	1.2	61	1.4	57	1.3