E P I - I N S I G H T

IONAD NAISIUNTA FAIRE GALAIR

DISEASE SURVEILLANCE REPORT OF NDSC, IRELAND

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IN THE NEWS!

Update: Illness among Injecting Drug Users in Scotland, Ireland and England

Since April 19th 2000, health authorities in Scotland, Ireland, England & Wales in collaboration with CDC, have been investigating an outbreak of illness and deaths among injecting drug users (IDUs) in Ireland and the United Kingdom. As of 25th August 2000, one hundred and eight cases (local case definitions), 40 of whom died, were identified from 1st April - 6th August 2000 in this outbreak. The epidemic curve relating to this outbreak is shown in Figure 1. The most recent "date of hospital presentation" in each country is: 6th August (Scotland), 26th June (Ireland) and 4th July (England). This outbreak is now considered over in Ireland but health authorities remain vigilant for the appearance of any new cases.

For the purpose of active case finding at international level a specific syndromic case definition was agreed and published[1]: soft tissue inflammation (i.e. abscess, cellulitis, fasciitis or myositis) at an injection site and either severe systemic toxicity (i.e. sustained systolic blood pressure <90 mmHg despite fluid resuscitation and total peripheral white blood cell count >30,000 cells/mm^3, or post-mortem evidence of a diffuse toxic or infectious process including pleural effusions and soft tissue oedema or necrosis, in an IDU admitted to a hospital or found dead since April 1st 2000. It would appear that this illness has been confined to injecting drug users in Scotland, Ireland and England. As of 25th August, Table 1 summarises data from each country, collated by a joint coordinating team with representatives from their national surveillance centres.

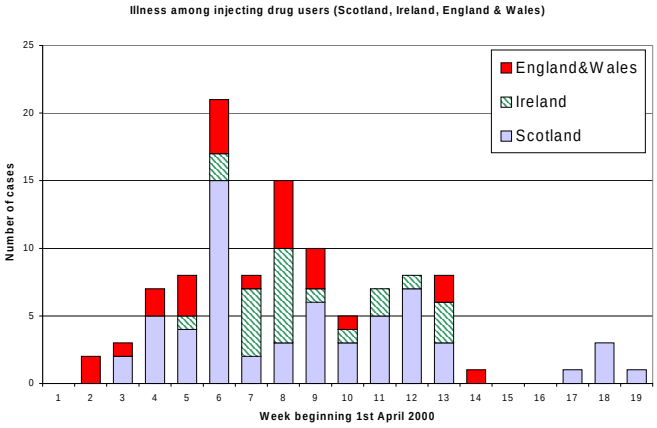

Figure 1:Illness among injecting drug users (Scotland, Ireland, England & Wales by week beginning 1/4/2000

Clostridium novyi was isolated in 14 cases, six of which met the syndromic definition (one of which was identified in Ireland). *Clostridium perfringens* was isolated in 13 cases, six of which met the syndromic definition. The exact significance of the presence of clostridial species remains to be determined but it may suggest contamination of the drugs or other materials used by these IDUs. The principal outbreak investigation teams in Dublin (ERHA) and Scotland (GGHB) are conducting case control studies and will present their findings at a later date.

1 CDC. Unexplained illness and deaths among injecting drug users-Glasgow, Scotland; Dublin, Ireland; and England, April-June 2000. MMWR 2000;49:489-492

Dr R Andraghetti & Dr D Goldberg, SCIEH, Scotland; Dr A Smith & Dr D O'Flanagan, NDSC, Ireland; Dr A Lieftucht & Dr N Gill, PHLS, England.

Table 1: Profile of cases of illness among injecting drug users April-August 2000

	England & Wales	Ireland	Scotland
(1) Local case definitions			
Total no of cases	25	23	60
Male:female ratio	13:12	15:8	27:30
Median age and range in years	33 (23-48)	30 (19-51)	30 (20-48)
Range of date of presentation to hospital	8th April-4th July 2000	2nd May –26th June 2000	19th April-2nd August 2000
(2) Syndromic case definition			
No of cases meeting international syndromic case definition	12	8	19
No of deaths in those meeting international syndromic case definition	10	8	19

Epidemiology of Meningococcal Disease in Ireland

A report on laboratory confirmed cases, July 1999-June 2000

Introduction

Meningococcal disease (MCD) is a source of great public anxiety as it is an important cause of morbidity and mortality, particularly in young children. At present MCD is hyper-endemic in Ireland. In 1999, 14.7 cases per 100,000 were notified, an increase of 19.4% from 1998.[1] The incidence rates for laboratory-confirmed cases rose from 9.5 in 1997, to 10.1 in 1998 to 12.0 cases per 100,000 in 1999. These figures compare badly with the European average of 1.4 laboratory-confirmed cases per 100,000 for 1997/1998.[2] The high incidence rates in Ireland may be related in part to the methods of case ascertainment used. For example, very sensitive molecular techniques (polymerase chain reaction) are routinely used in the diagnosis of MCD in this country. Consequently, if only the traditional laboratory methods were employed, some of these cases may otherwise go undetected. Accurate surveillance of MCD is vital for evaluating the burden of the disease nationally and such surveillance will also be important in monitoring and evaluating the effects of introducing the meningococcal C conjugate vaccine later this year.

Methods

As the meningococcal season generally straddles the new-year period in the northern hemisphere, July to June is now generally accepted as the epidemiological year for MCD. Therefore, data on laboratory confirmed cases of MCD presented in this report relate to the period July 1999 – June 2000. These data were supplied by the National Meningococcal Reference Laboratory (MRL) at The Children's Hospital, Temple Street, Dublin. Data were analysed in MS Excel. Population data were taken from the 1996 census. Direct standardisation was used to adjust for the confounding effects of differing age distributions that may exist in the different health boards. The Irish population was used as the standard population.

Results

Between July 1999 and June 2000, 446 cases of laboratory confirmed MCD were identified in Ireland. This was equivalent to an annual incidence rate of 12.3 per 100,000 population. The number of cases each month by health board is presented in Table 1. The male:female ratio was 1.2:1.0, with males accounting for 54% (243) cases and females 46% (203). Fifty-eight percent of the cases (259) were diagnosed by the polymerase chain reaction (PCR), 39% (174)by culture and 3% (13) by serology. Those confirmed by PCR were culture negative, therefore, had PCR testing not been available 58% of cases would have gone undetected. MCD was diagnosed using blood samples in 78.5%, CSF in 9.4% and CSF & blood in 12.1% of cases. There was a major peak in the number of laboratory-confirmed cases of MCD in January (Figure 1). The NWHB rate (7.2/100,000; 95% CI 3.5-10.8) and WHB rate (7.7/100,000; 95% CI 4.8-10.6) were significantly lower than the national rate (12.3/100,000; 95% CI 11.2-13.4).

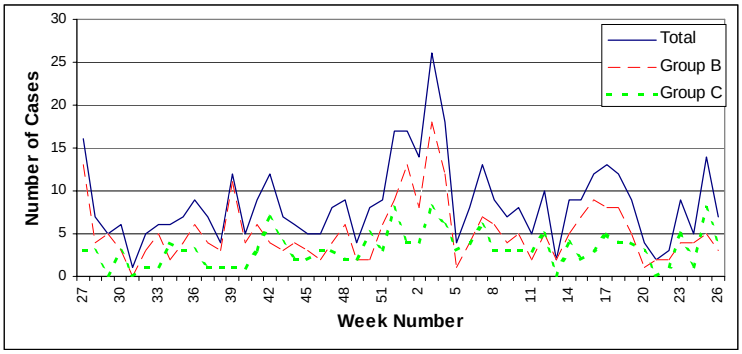

Figure 1. Laboratory-confirmed cases of meningococcal disease in Ireland by week (July 1999– June 2000).

Table 1. Number of cases of meningococcal disease and annual incidence rates by health board in Ireland (July1999 - June 2000).

	ERHA	MHB	MWHB	NEHB	NWHB	SEHB	SHB	WHB	Total
July	11	2	2	6	0	4	9	2	36
August	10	0	2	2	1	2	3	2	22
September	15	6	2	4	1	1	2	0	31
October	20	1	4	4	2	0	5	2	38
November	16	2	1	2	1	1	3	3	29
December	12	0	3	7	1	4	8	3	38
January	32	5	6	10	2	9	9	7	80
February	16	1	1	3	2	5	5	1	34
March	8	5	1	6	3	4	3	0	30
April	20	3	5	2	2	6	1	4	43
May	11	4	1	1	0	2	8	2	29
June	22	2	0	3	0	2	6	1	36
Total	193	31	28	50	15	40	62	27	446
Crude Incidence Rate per 100,000	14.9	15.1	8.8	16.3	7.1	10.2	11.3	7.7	12.3
Age Standardised Rate per 100,000	15.0	14.5	8.8	15.8	7.2	10.1	11.5	7.7	

Nationally, *N. meningitidis* Group B and Group C accounted for 270 (61%) and 165 (37%) MCD cases respectively. However, the situation was the opposite in the south of the country, with Group C accounting for approximately 60% of the MCD cases reported in the South-Eastern and Southern Health Boards.

An annual crude incidence rate of 7.5 cases per 100,000 was observed for *N. meningitidis* Group B. After direct standardisation the Eastern Regional Health Authority had the highest incidence of Group B (10.3/100,000), followed by the North-Eastern Health Board (10.0/100,000), while the South-Eastern Health Board had the lowest (4.1/100,000) (Figure 2). An annual crude incidence rate of 4.6 laboratory-confirmed cases per 100,000 was reported for *N. meningitidis* Group C. Following direct standardisation, the highest rates occurred in the Southern and South-Eastern Health Boards (7.1 and 6.1/100,000), while the lowest was in the North Western Health Board (1.9/100,000), see Figure 2.

The most common Group B serotype was 4:P1.4 accounting for 31% of the typed Group B isolates, while 2a:P1.5,P1.2 was the most common Group C serotype (52% of typed Group C isolates).

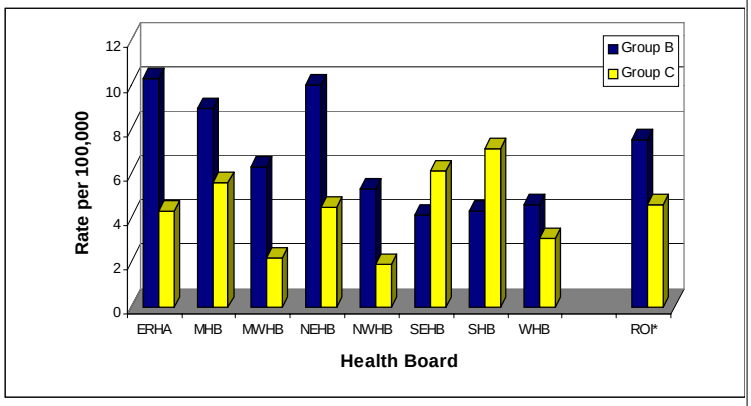

Figure 2. Annual age-standardised incidence rates of N. meningitidis Group B and C by health board in Ireland (July 1999 – June 2000)
* Annual crude incidence rate

The highest age specific incidence rates for both *N. meningitidis* Group B and C were in the youngest age groups (≤4 years). In the case of Group C, there was a second peak in the 15-19 year age group (Table 2a & 2b).

Twenty-five deaths due to MCD occurred in Ireland between July 1999 and June 2000. This represented a case fatality rate of 5.6%. The case fatality rate (CFR) by age group for *N. meningitidis* Group B and C is presented in Tables 2a & 2b. The CFR for Group B was highest in 20-24 year old age group, while the CFR for Group C was highest in 15-19 year old age group.

Age Group (yrs)	No. cases	Rate/100,000	No. Deaths	CFR (%)
<1	67	137.1	4	6.0
1-4	97	48.1	5	5.2
5-9	23	8.1	0	0
10-14	22	6.8	0	0
15-19	33	9.7	2	6.1
20-24	10	3.4	2	20.0
>25	18	0.8	1	5.5
Total	270	7.5	14	5.2

Table 2a. Number of cases, age specific incidence and case fatality rate (CFR) of N. meningitidis Group B in Ireland, July 1999-June 2000

Table 2b. Number of cases, age specific incidence and case fatality rate (CFR) of N. meningitidis Group C in Ireland, July 1999-June 2000

Age Group (yrs)	No. cases	Rate/100,000	No. Deaths	CFR (%)
<1	16	32.8	1	6.3
1-4	47	23.3	2	4.3
5-9	24	8.5	2	8.3
10-14	18	5.5	1	5.6
15-19	36	10.6	4	11.1
20-24	13	4.4	1	7.7
>25	10	0.5	0	0
??	1		0	0
Total	165	4.6	11	6.7

Discussion

Between July 1999 and June 2000 there was an annual crude incidence rate of 12.3 laboratory confirmed cases of MCD per 100,000 in Ireland. This reveals a 10% increase from the same period in 1998/99, 11.2 cases per 100,000 (405 cases) and a 28% increase from 1997/98, 9.6 cases per 100,000 (348 cases).

The incidence of Group B has remained largely unchanged compared to the same period in 1998/99 (274 cases, 7.6/100,000), whereas the incidence of Group C has increased by 43% (115 cases, 3.2/100,000). The introduction of the meningococcal C conjugate vaccine later this year should significantly reduce the incidence of Group C MCD in Ireland and it will be interesting to monitor the trends.

The number of deaths due to MCD doubled in 1999/2000 (25 deaths, CFR of 5.6%) compared to the same periods in 1998/99 (12 deaths, CFR of 3.0%) and 1997/98 (13 deaths, CFR of 3.7%). The ratio of Group B:C deaths was 1.3:1 in 1999/2000 compared to 2:1 in 1998/99 and 5.5:1 in 1997/98.

Insight Messages

- The MRL provides a service for both the non-culture diagnosis of MCD by PCR and epidemiological characterisation/susceptibility testing of *N.meningitidis*.
- An EDTA blood sample or a CSF sample should be sent for PCR.
- Epidemiological information obtained from typing viable cultures is essential for the study of MCD, especially in the light of the future vaccination campaigns.
- MRL would like to thank laboratories that are currently sending strains and would encourage laboratories not yet availing of the service to do so.

References

1. Fitzgerald, M and O'Flanagan, D. Enhanced Surveillance of Bacterial Meningitis including Meningococcal Septicaemia, in the Republic of Ireland. Analysis of the Quarterly Returns 1997-1999; http://www.ndsc.ie

2. Noah, N and Henderson, B. Surveillance of bacterial meningitis in Europe 1997/98. London: PHLS Communicable Disease Surveillance Centre1999.

Dr Mary Cafferkey and Ms Karen Murphy, National Meningococcal Reference Laboratory & Dr Margaret Fitzgerald and Dr Darina O'Flanagan, NDSC.

LABORATORY-CONFIRMED SALMONELLA DATA

In January 2000 the Department of Health and Children provided resources for establishment of an Interim National Salmonella Reference Laboratory (INSRL) in the Department of Medical Microbiology, University College Hospital, Galway. The reference laboratory receives strains of *Salmonella enterica* from clinical and food microbiology laboratories for serotyping, phage typing, and antimicrobial sensitivity testing. Molecular typing by pulse field gel electrophoresis is also applied in specific situations. This month we report on all *Salmonella enterica* serotypes identified from January to July 2000. Strains are allocated to months based on the date of receipt of the isolate from the referring laboratory. The apparent increase in isolates in March and April is most likely due to increasing participation from laboratories at that time, who then sent in all isolates identified for the year so far at once. At present *Salmonella* Typhimurium and *Salmonella* Enteritidis are the predominant salmonella serotypes associated with human salmonellosis in Ireland. These figures are provisional as work may not be finalised on particular strains at the time of publication

EPI-INSIGHT shall from this month publish monthly tables of *Salmonella enterica* serotypes by health board region, based on the location of the referring laboratory. Data is provided courtesy of Professor Martin Cormican and Dr Geraldine Corbett-Feeney of INSRL.

Table 1: Number of laboratory-confirmed salmonella isolates by health board area Jan-Jul. 2000.

Health Board	E	M	MW	NE	NW	SE	S	W	Total
S.Typhimurium	56	7	12	34	11	22	17	33	195*
S.Enteritidis	61	4	1	3	3	4	41	9	126
S.Agona	0	0	0	0	1	1	1	0	3
S.Alachua	1	0	0	0	0	0	0	0	1
S.Anatum	0	0	0	0	0	0	1	0	1
S.Bareilly	0	0	0	0	0	0	1	1	2
S.Bovis-morbificans	2	0	0	0	0	0	0	0	2
S.Bredeney	3	0	0	2	2	5	1	1	14
S.Coeln	0	0	0	0	0	0	1	0	1
S.Dublin	1	2	0	2	1	1	0	2	10$
S.Grumpensis	0	0	0	0	0	1	0	0	1
S.Hadar	2	0	0	1	0	1	0	0	4
S.Heidelberg	0	1	0	0	0	0	0	0	1
S.Infantis	2	0	0	0	0	1	0	0	3
S.Java	0	0	0	0	1	2	2	0	5
S.Kentucky	1	0	0	0	0	0	0	0	1
S.Litchfield	0	0	0	2	0	0	0	0	2
S.Mapo	1	0	0	0	0	0	0	0	1
S.Mbandaka	0	0	1	0	0	0	1	0	2
S.Mississipi:(Atlanta)	0	1	0	0	0	0	0	0	1
S.Montevideo	1	0	0	0	0	0	0	0	1
S.Othmarschen	1	0	0	0	0	1	0	0	2
S.Saintpaul	1	0	0	0	0	0	0	0	1
S.Schwarzengrund	1	0	0	0	0	3	0	0	4
S.Singapore	1	0	0	0	0	0	0	0	1
S.Stanley	0	0	0	1	0	0	0	0	1
S.Thompson	1	0	0	0	0	1	0	0	2
Unnamed	3	0	0	0	0	1	0	0	4
S.Virchow	2	0	0	0	0	1	2	0	5
Total	141	15	14	45	19	45	68	46	397

* Three isolates not assigned to health board, $ One isolate not assigned to health board

Table 2: Number of laboratory-confirmed salmonella isolates by health board area July 2000.

Health Board	E	M	MW	NE	NW	SE	S	W	Total
S.Typhimurium	7	0	0	1	2	2	2	4	19*
S.Enteritidis	18	3	0	0	1	0	11	3	36
S.Agona	0	0	0	1	0	0	1	0	2
S.Alachua	1	0	0	0	0	0	0	0	1
S.Anatum	0	0	0	0	0	0	1	0	1
S.Dublin	0	0	0	0	1	0	0	1	3$
S.Infantis	1	0	0	0	0	1	0	0	2
S.Litchfield	0	0	0	1	0	0	0	0	1
S.Mbandaka	0	0	1	0	0	0	0	0	1
S.Othmarschen	0	0	0	0	0	1	0	0	1
S.Virchow	2	0	0	0	0	1	1	0	4
Total	29	3	1	3	4	5	16	8	71

* One isolatenot assigned to Health Board, $ One isolate not assigned to Health Board

Table 3 Number of laboratory-confirmed salmonella isolates by month Jan-Jul. 2000.

Serotype	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
S. Agona	0	0	0	1	0	0	2	3
S. Alachua	0	0	0	0	0	0	1	1
S. Anatum	0	0	0	0	0	0	1	1
S. Bareilly	0	0	1	0	1	0	0	2
S. Bovis-morbificans	0	0	1	1	0	0	0	2
S. Bredeney	1	1	3	1	4	4	0	14
S. Coeln	0	0	0	1	0	0	0	1
S. Dublin	0	0	3	0	3	1	3	10
S. Enteritidis	10	0	5	44	15	16	36	126
S. Grumpensis	0	0	0	0	0	1	0	1
S. Hadar	0	0	1	0	3	0	0	4
S. Heidelberg	0	0	0	0	1	0	0	1
S. Infantis	0	0	0	0	0	1	2	3
S. Java	0	0	0	2	2	1	0	5
S. Kentucky	0	0	0	0	1	0	0	1
S. Litchfield	0	0	0	1	0	0	1	2
S. Mapo	1	0	0	0	0	0	0	1
S. Mbandaka	0	0	0	1	0	0	1	2
S. Mississipi: Atlanta	0	0	0	0	1	0	0	1
S. Montevideo	0	0	0	0	0	1	0	1
S. Othmarschen	0	0	1	0	0	0	1	2
S. Saintpaul	0	0	0	0	0	1	0	1
S. Schwartzengrund	0	1	1	2	0	0	0	4
S. Singapore	0	0	0	0	0	1	0	1
S. Stanley	0	0	1	0	0	0	0	1
S. Thompson	0	0	0	0	2	0	0	2
S. Typhimurium	15	19	71	23	26	22	19	195
Unnamed	0	0	0	2	1	1	0	4
S. Virchow	0	0	0	0	0	1	4	5
Total	27	21	88	79	60	51	71	397