Ionad Naisiunta Faire Galair

EPI-INSIGHT

DISEASE SURVEILLANCE REPORT OF NDSC, IRELAND

ISSN: 1393-9548

Volume 4, Issue 9, December 2003

In Partnership for Prevention and Protection

Contents:

National Disease Surveillance Centre,

25-27 Middle Gardiner St
Dublin 1,
Ireland

Tel: +353 (0)1 **876 5300**
Fax: +353 (0)1 **856 1299**
info@ndsc.ie
www.ndsc.ie

Tetanus in Injecting Drug Users in England

Since July 2003, seven cases of tetanus and one death have been reported in injecting drug users (IDUs) in various parts of England.[1] Of these, six have occurred since October. Four of the cases were in females and three in males. They ranged in age from 20 and 47 years. Two of the cases are known to be unimmunised and one case received a dose of tetanus toxoid nine years ago. However, IDUs may be at risk of tetanus regardless of their immune status.

Tetanus is caused by an exotoxin of the tetanus bacillus, *Clostridium tetani*, an anaerobic, spore-forming bacillus. Spores remain viable for years and can be found in soil, and animal and human faeces. Tetanus may follow a trivial or inapparent wound if the oxygen content in the injured tissue is low.[2] The incubation period is 3 to 21 days with an average of about 10 days. A common first sign of tetanus in adults is abdominal rigidity and stiffening in the jaw until it is locked in position (trismus or 'lockjaw'). This is followed by frequent and painful spasms, progressing in severity and accompanied by dysphagia, increasing respiratory embarrassment and, in the most severe cases, autonomic neurological dysfunction. Mortality is highest in young and old people and in drug abusers.

Most diagnoses of tetanus are made on clinical grounds alone, and early recognition and treatment with wound debridement, metronidazole, and tetanus immunoglobulin, can be life saving. It is important that IDUs, drug workers, and clinicians are aware of early symptoms. Clinicians in A&E, microbiologists, general physicians, and intensive care workers should have a low threshold for considering a diagnosis of tetanus in an IDU. Early treatment with tetanus immunoglobulin may be life saving.

The following advice should be given to those who inject drugs:

- IDUs who develop any of the above symptoms should seek medical advice immediately.
- Never share needles, syringes, cookers/spoons or other 'works' with other users.
- Smoke heroin instead of injecting it.
- If you must inject, do not inject into muscle or under the skin: make sure you hit the vein as blood kills bacteria better than muscle.
- Use as little citric acid as possible as too much damages the skin and muscle and gives bacteria a better chance to grow and cause infection.
- If you inject more than one type of drug, do not inject them all in the same place or with the same 'works' as certain drugs give bacteria a better chance to grow.

Potential sources for tetanus infection in IDUs are contaminated drugs, paraphernalia, and contaminated skin. Intramuscular and subcutaneous drug use in particular, are associated with tetanus infections in IDUs. The source of infection in this incident is not known. However, the close clustering of recent cases suggests contamination of drugs.[1] If there is a continuing source of contamination then more cases of tetanus in IDUs are expected. Increased awareness is therefore extremely important.

In 2000, an outbreak of serious illness and death among IDUs in Scotland, Ireland, and England, was associated with *Clostridium novyi* infection, a particular supply of heroin, and a particular method of preparation and injection (subcutaneous and/or intramuscular injection). A total of 108 cases and 44 deaths were reported in this outbreak.[3]

Tetanus is a notifiable disease in Ireland and even a suspected case in an IDU should be notified immediately to the local department of public health.

References

1. HPA. Cluster of cases of tetanus in injecting drug users in England: update. *CDR Wkly* 2003; **13** (48). Available at www.hpa.org.uk/cdr.pages/news.htm
2. Beers MH, Berkow R. The Merck Manual of Diagnosis and Therapy. New Jersey: Merck Research Laboratories; 1999.
3. HPA. Cluster of cases of tetanus in injecting drug users in England. *CDR Wkly* 2003; **13** (47). Available at www.hpa.org.uk/cdr/pages/news.htm#tetanus

HIV and AIDS in the Republic of Ireland, 2002

Introduction

The HIV/AIDS epidemic claimed more than three million lives in 2002, making it the fourth biggest global killer. An estimated five million people acquired the HIV virus in 2002, bringing to 42 million the number of people globally living with the virus. Current projections suggest that an additional 45 million will become infected with HIV between 2002 and 2010, unless the world succeeds in mounting a drastically expanded, global prevention effort.[1]

Increasing numbers of HIV infections have been diagnosed in the Republic of Ireland since the late 1990s.[2] National HIV case based reporting was introduced in July 2001, on a recommendation of the National AIDS Strategy Committee.[3] This surveillance system aims to ensure the collection of accurate and complete epidemiological data on the distribution and mode of transmission of newly diagnosed HIV infections.

Methods

National HIV case based reporting is a voluntary reporting system and has been operational since July 2001. For every newly confirmed HIV diagnosis, the National Virus Reference Laboratory (NVRL) sends a partially completed HIV/AIDS surveillance report form to the clinician who requested the confirmatory test. An anonymised copy of the form is also sent to the Director of Public Health (or his/her nominee) of the health board where the patient resides. The clinician completes the form and returns it to the relevant Director of Public Health. The forms are then forwarded to NDSC where national figures are collated and published every six months. In addition, every six months, the data are forwarded to EuroHIV, the European Centre for the Epidemiological Monitoring of AIDS.

Results

HIV Infections

There were 364 newly diagnosed HIV infections in the Republic of Ireland in 2002 (93.9 per million population). This represents a 22% increase on the number of cases in 2001. There was a 4.8 fold increase in the number of newly diagnosed HIV infections between 1994 and 2002 (figure 1). The cumulative total of HIV cases reported in the Republic of Ireland to December 2002 is 3,009.

Exposure categories

The three main exposure categories are heterosexual contact, injecting drug users (IDUs) and men who have sex with men (MSM) (table 1). Since the late 1990s, there has been a steep increase in the number of newly diagnosed cases in the heterosexual transmission category. The number increased from 22 in 1994, to 231 in 2002, a 10.5 fold increase (figure 1).

Among IDUs, there was a 32% increase over the previous year in the numbers of cases diagnosed, from 38 in 2001, to 50 in 2002. There was a 37% decrease in the number of cases reported in the MSM category, from 73 in 2001, to 46 in 2002. These fluctuations must be interpreted with caution as the numbers involved are small and it remains to be seen whether these trends will be sustained in the future.

There were 8 children diagnosed with HIV infection during 2002. In addition, there were 119 babies born to HIV infected mothers during 2002. Their infection status is undetermined as yet.

Table 1. Newly diagnosed HIV infections in the Republic of Ireland, by exposure category (2002)

Exposure Category	2002 Number	2002 %
Heterosexual	231	63.5
MSM	46	12.6
IDU	50	13.7
Mother-to-child	8	2.2
Haemophiliac	1	0.3
Other	4	0.6
Undetermined	24	6.6
Total	**364**	**100**

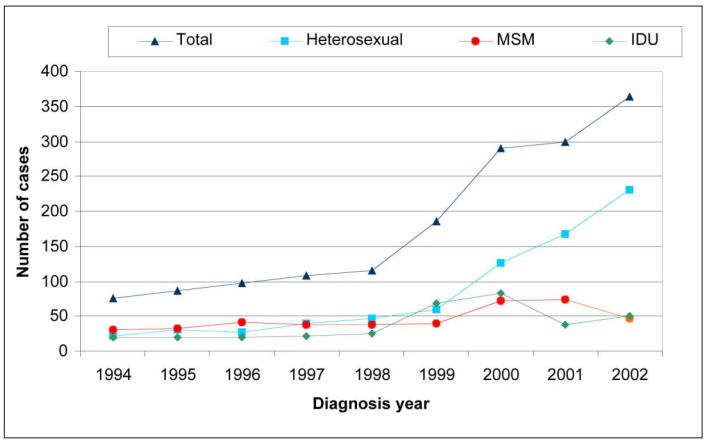

Figure 1, Newly diagnosed HIV infections in the Republic of Ireland, among heterosexuals, MSM and IDUs, 1994 to 2002

Age and sex distribution

Of the 364 cases diagnosed in 2002, 198 (54.4%) were female and 165 (45.3%) were male. Seventy two percent of all newly diagnosed heterosexual cases were female. Sixty six percent of all newly diagnosed IDUs cases were male.

Over 80% of cases diagnosed in 2002 were between 20 and 40 years of age with a mean age of 30.8 years. The mean age in females was 28.1 years and in males was 34.0 years, a difference of 5.9 years. The mean age of cases in heterosexuals was 30.0 years, in IDUs was 30.6 years and in MSM was 38.5 years.

Geographic origin

Data on the geographic origin of HIV cases are available since the introduction of HIV case based reporting in July 2001. Geographic origin is based on the country of birth for adults and on the country of birth of the mother for children. Of the 364 cases diagnosed in 2002, 186 (51.1%) were born in sub-Saharan Africa and 92 (25.3%) were born in the Republic of Ireland (figure 2). The majority of heterosexuals (76.6%) diagnosed in 2002, were born in sub-Saharan Africa. The majority of MSM (65.2%) and IDUs (70.0%) diagnosed in 2002 were born in the Republic of Ireland. The majority of women (70.7%) diagnosed in 2002 were born in sub-Saharan Africa. Forty two percent of males were born in the Republic of Ireland.

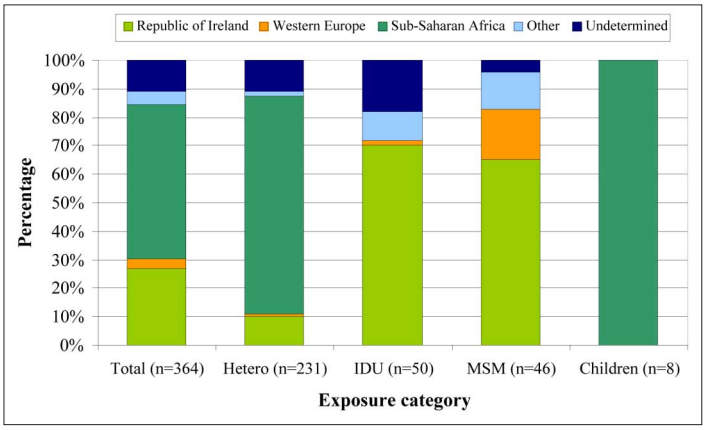

Figure 2. Geographic origin of HIV cases, by exposure category, 2002

Area of residence

Of the newly diagnosed cases in 2002, 57.7% of cases were resident in the Eastern Regional Health Authority (ERHA) at the time of diagnosis. By exposure category, 60.6% of heterosexuals, 67.4% of MSM and 72.0% of IDUs were resident in the ERHA.

AIDS Cases

The introduction of highly active antiretroviral therapy (HAART) during 1996 and 1997 led to a well documented reduction in mortality and risk of AIDS-defining illnesses in countries where HAART was available.[4] The incidence of AIDS and AIDS-related deaths in the Republic of Ireland, has declined in all exposure categories since the mid-1990s (figure 3).[5] However, it is important to note that there is a significant delay in reporting AIDS cases and AIDS related deaths. The number reported in 2002 is likely to be an underestimation of the true number of cases and deaths.

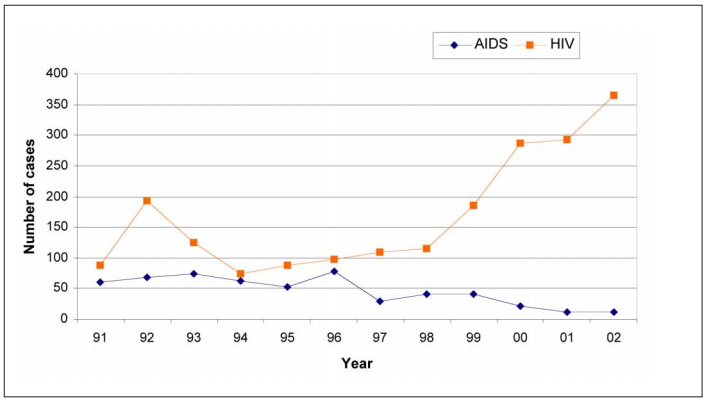

Figure 4. AIDS cases and HIV infections in the Republic of Ireland, 1991 to 2002

Discussion

The annual incidence of HIV infection in the Republic of Ireland has increased substantially over the last eight years. This can be largely explained by a steep rise in the number of newly diagnosed cases in the heterosexual transmission category. Heterosexual transmission is now the most frequent transmission mode for newly diagnosed HIV infections in the Republic of Ireland and Western Europe.[2 6] In 2002, it accounted for 44% of all new HIV diagnoses reported in Western Europe and for more than 50% in Ireland, United Kingdom, Norway, Sweden and Denmark.[6]

The IDUs and MSM risk groups, though much smaller in population size than the heterosexual population, remain those most at risk of HIV infection. In Germany, Greece and the Netherlands, sex between men was the most frequent mode of transmission in 2002. In Portugal, IDUs represent the main transmission group.[6]

The epidemiology of the HIV epidemic in the Republic of Ireland mirrors the situation in other Western European countries where persons originating from sub-Saharan Africa bear an increasing share of the burden of the HIV/AIDS epidemic.[6] It is estimated that to the end of 2002, 29.4 million people are infected with the HIV/AIDS virus in sub-Saharan Africa.[1] Therefore, the number of cases of HIV infection diagnosed among people of sub-Saharan African origin in the Republic of Ireland is not unexpected. It is also important to note that immigrants from sub-Saharan Africa do not form a homogenous group and include students, immigrant workers, refugees, economic migrants, asylum seekers and others.

Females are younger at HIV diagnosis then males in the Republic of Ireland, and this trend has been seen worldwide.[1] It has been suggested that women may be at risk for infection at an earlier age due to infection by older sexual partners.[1] In addition, the availability of routine antenatal HIV screening in the Republic of Ireland may result in women being diagnosed more promptly than males.

An increase in the incidence of sexually transmitted infections in the Republic of Ireland and a recent syphilis outbreak among MSM in Dublin, raises concerns about a potential increase in the incidence of HIV infection.[7] Concurrent STIs increase the transmission probability for HIV infection and it is of concern that 18% (73/408) of the early syphilis cases reported in the Republic of Ireland between January 2000 and December 2002 were also reported to be HIV positive.[7]

In 2002, the rate of HIV infection in the Republic of Ireland was 93.9 per million population. This is the fourth highest rate in Western Europe after Portugal, Switzerland and the UK.[6] However, national data are not available for France, Italy and Spain, the three countries with the largest HIV/AIDS epidemics in Western Europe.[6]

Kate O'Donnell and Mary Cronin, NDSC

Acknowledgements

The authors wish to thank all of the partners in the HIV case based reporting system: the National Virus Reference Laboratory, the Department of Health and Children, the Departments of Public Health, Microbiology Laboratories, Consultants in Infectious Disease/GUM and all other clinicians involved.

References

1. Joint United Nations Programme on HIV/AIDS. AIDS epidemic update – December 2002. Geneva: UNAIDS; 2002.
2. NDSC. HIV and AIDS in Ireland. Quarter 3 and 4, 2002 Report and 2002 Annual Summary.
3. National AIDS Strategy Committee. Department of Health and Children. AIDS Strategy 2000.
4. Palella FJ *et al*. Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. *NEJM* 1998; **338** (13): 853-60.
5. O'Donnell K, Cronin M, Igoe D. Epidemiology of AIDS in Ireland, 1983 to 1999. *Epi-Insight* 2001; **2** (8).
6. European Centre for the Epidemiological Monitoring of AIDS. HIV/AIDS Surveillance in Europe. End-year report 2002. Saint-Maurice: Institut de Veille Sanitaire, 2003. No. 68.
7. Cronin M, Domegan L. Incidence of STIs continues to rise in the Republic of Ireland. *Eurosurveillance Weekly* 2003; **7**(42).

WORLD AIDS DAY 1st December 2003

World AIDS Day is commemorated around the globe on December 1st. It celebrates progress made in the battle against the HIV/AIDS epidemic - and brings into focus remaining challenges. World AIDS Day 2003 highlights "live and let live" the theme of the World AIDS campaign 2002-2003. The campaign focuses on eliminating stigma and discrimination, the major obstacles to effective HIV/AIDS prevention and care. The campaign aims to encourage people to break the silence and the barriers to effective HIV/AIDS prevention and care.

Early Arrival of Influenza A in Secondary School Children in the Eastern Regional Health Authority

Influenza A is a major cause of concern this winter. We report on two outbreaks within a week of each other that occurred in early September in the Eastern Regional Health Authority (ERHA).

On Wednesday September 3rd concerns were raised when two 6th year students from the same school were admitted to hospital with suspected meningitis and 27 boys were reported absent. Later that evening the health board was alerted to stories about teenage boys "flooding" into the local hospital accident and emergency (A&E) department with high fever, headaches, sore throats and flu-like symptoms. Most of those admitted were treated with intravenous antibiotics.

Control measures

An incident meeting at the hospital confirmed some increased patient consultations in general practices in the area but this was mainly related to the affected school. Early control measures included accommodating patients from the school in one ward in the hospital. The school was closed and an advice letter from the local senior area medical officer was sent to each parent. Students were advised to stay at home if unwell, to contact their GP if worried and to pay particular attention to hygiene, especially hand washing. The regional director of public health appeared on TV and radio on the evening of the 4th to allay fears and to advise on practical measures for parents. Letters were sent to local GPs and the A/E departments of all acute hospitals in the region.

Microbiological investigation

Early investigations ruled out meningitis or an identifiable bacterial pathogen. Low white cell counts, C reactive protein levels and clear chest x-rays pointed towards a viral cause. However, initial viral cultures were negative.

Environmental inspection

The local area medical officer and environmental health officer visited the school premises on September 4th. The school was found to be overcrowded and hygiene facilities, especially toilets and hand washing facilities were inadequate. Water samples from the mains supply and the water tank were found to be negative for indicator organisms. The school remained closed until Thursday 11th.

Epidemiological

Epidemiological studies included a descriptive study of all ill students and a retrospective cohort study of 6th year boys. A total of 160 students and 4 teachers were ill with most cases occurring between 3rd and 7th September. While the overall attack rate was 13%, in 6th year students it was much higher at 42%. Twenty three cases were admitted to hospital. The median duration of illness was 4 days. The school reopened after 8 days. Surveillance continued for a further two weeks but no new cases were detected.

One week later a second school in the ERHA reported that several students were ill with what appeared to be similar symptoms. This school had more than 300 pupils, the majority of whom were boarders. The first case had onset of illness on 7th September. Over the next 10 days, other pupils developed a similar illness. The symptoms were mainly high fever (39°C), headache and sore throat. One pupil was admitted to hospital. In total, 81 pupils and one staff member were ill. The student attack rate was 26%. Throat swabs were sent for bacteriological and viral culture. Influenza A (H3N2) was identified by RT-PCR at the National Virus Reference Laboratory (NVRL) in four of the 8 specimens. The strain was later confirmed as influenza A/Fujian/411/2002 (H3N2) by the WHO Reference Laboratory at Mill Hill, UK. This prompted a retrospective analysis of the samples collected during the first outbreak and the throat swabs were this time tested for Influenza A by RT-PCR. Acute and convalescent samples if available were tested for antibody to influenza A using fixation testing. Twelve of 15 cases were positive for influenza A/Fujian/411/2002 (H3N2) and rising titres for influenza A were found in 2 of 5 cases.

Discussion

The influenza season started early in Ireland this year. These outbreaks were the first reported in Europe this season.[1] The A/Fujian-like virus found here was first detected in China in 2002 and was also found in low numbers during the 2002/3 influenza season in Europe.[2] Australia reported outbreaks and increased activity for influenza A in August this year.[3] New Zealand had a problem throughout June and July.[1] The influenza A(H3N2)/Fujian/411/2002-like virus was the predominant virus circulating in Australia and New Zealand during the recent influenza season. This virus represents an antigenic drift from the previously circulating A/Panama-like (H3N2) strains.

The outbreaks in the ERHA caused by the Fujian strain had considerable impact on young people reflected in the severity of symptoms and the high hospitalisation rate. The outbreaks were associated with considerable public anxiety and caused major disruption in the schools. Despite the rapid spread within the schools, there was relatively little secondary and community spread. Prompt and effective control measures in the schools and hospitals where patients were admitted probably helped to break the cycle of transmission. All students made a full recovery.

Early investigation and implementation of control measures are important interventions in limiting the spread of influenza. Vaccination is an important intervention in the high risk groups. Current influenza vaccine contains A/Panama-like (H3N2) strains which provide protection against A/Fujian-like strains although at a reduced level.[1]

M Fitzgerald, ERHA; M Conlon, SWAHB; P Murphy, Naas Hospital; J Connell, S Coughlan, NVRL; C Danis, NDSC

References

1. European Influenza Surveillance Scheme. Low but increasing influenza activity. *EISS Weekly Electronic Bulletin* 2003; **43** (95).
2. Domegan L et al. Influenza season 2002/2003. *Epi-Insight* 2003; **4** (8).
3. WHO Collaborating Centre for Reference & Research on Influenza, Melbourne, Australia. Outbreak of influenza reported throughout Australia. News item, September 2003. (http://www.influenzacentre.org/index.htm)

Salmonella Monthly Report (October 2003):

Strains are allocated to months based on the date of receipt of the isolate from the referring laboratory. These figures are provisional as work may not be finished on particular strains at the time of publication. Data are provided courtesy of Prof Martin Cormican and Dr Geraldine Corbett-Feeney, NSRL.

Health Board	E	M	MW	NE	NW	SE	S	W	Total
S. Brandenburg	1	0	0	0	0	0	0	0	**1**
S. Dublin	0	0	1	0	0	0	0	0	**1**
S. Enteritidis	12	1	0	4	2	6	4	0	**29**
S. Kentucky	0	0	0	1	0	0	0	0	**1**
S. Manhattan	0	0	1	0	0	0	0	0	**1**
S. Newport	0	0	0	0	0	0	0	1	**1**
S. Reading	2	0	0	0	0	0	0	0	**2**
S. Senftenberg	1	0	0	0	0	0	0	0	**1**
S. Stanley	2	0	0	0	0	0	0	0	**2**
S. Typhi	0	0	1	0	0	0	0	0	**1**
S. Typhimurium	17	1	1	0	3	2	4	0	**28**
S. Virchow	0	0	0	0	1	0	0	0	**1**
S. Wangata	1	0	0	0	0	0	0	0	**1**
Unnamed	0	0	0	0	0	0	1	0	**1**
Total	**36**	**2**	**4**	**5**	**6**	**8**	**9**	**1**	**71**