

Congenital Rubella

Key Points

- Congenital rubella continues to be extremely rare in the UK and Ireland, with only one confirmed case reported in 2007.
- Among the 15 infants with congenital rubella born and reported in the UK or Ireland since 1997, ten (67%) had mothers who acquired their infection abroad.
- In almost all recent cases, maternal rubella infection was not diagnosed in pregnancy, and the diagnosis of congenital rubella infection in the newborn baby was unexpected.

Background

The National Congenital Rubella Surveillance Programme was established in 1971 to monitor congenital rubella births in England, Scotland and Wales. Active surveillance through the BPSU started in 1990, and since then reports have also been received from The Republic of Ireland and Northern Ireland. Diagnosed rubella infection in pregnancy is monitored through laboratory reports to the Health Protection Agency (HPA) or Health Protection Scotland (HPS), and has remained at a very low level in recent years (<10 a year). Women with diagnosed first trimester infection usually opt for termination of pregnancy in the UK; most mothers of congenitally infected infants are unaware of their infection until their baby is diagnosed.

The World Health Organisation Regional Office for Europe set a target for the elimination of measles and rubella, and prevention of congenital rubella infection (<1 case of congenital rubella syndrome per 100,000 births) by 2010. Long-standing vaccination programmes have already led to the virtual elimination of congenital rubella in the UK and Ireland.^{1,2} Nevertheless, sub-optimal MMR coverage, and migration within Europe present major challenges to reaching this target, and maintaining control in the long term. As a result of over 10 years of inadequate vaccine uptake with no wild virus circulating, there are likely to be substantial pockets of susceptible children in parts of the UK and Ireland. In addition, inward migration from countries without long-standing high uptake rubella vaccination programmes will have led to greater concentrations of susceptible individuals in some areas, often the very places where MMR uptake has been low (e.g. parts of London). Under these circumstances it is possible that rubella could once again start to circulate in the British Isles, as it still does in many parts of the world.



Dr P Tookey

Comprehensive national surveillance through the BPSU therefore remains extremely valuable. Timely reporting by paediatricians will help us to recognise any resurgence in numbers at an early stage, and will also assist in the implementation of appropriate control measures. Congenitally infected infants excrete rubella virus for an extended period of time, and it is important that they are diagnosed and managed appropriately to avoid the risk of further community transmission.

Objectives

To monitor the effectiveness of the rubella immunisation programme by determining the incidence of congenital rubella and investigating the circumstances surrounding any new cases.

Surveillance period

Surveillance through the BPSU began in January 1990 and is reviewed annually.

Methodology

Case definition

Any infant (live or still born) or child up to 16 years of age who, in the opinion of the notifying paediatrician, has suspected or confirmed congenital rubella with or without defects, based on history, clinical, and/or laboratory findings. This includes “imported cases”, i.e. children born in the British Isles where the maternal infection occurred abroad, AND children who were born abroad, as well as British-born infants whose mothers acquired infection in the British Isles.

CDC-Public Health Image Library



Figure 12: Cataracts due to congenital rubella syndrome

Reporting instructions: Any live or still born infant, or child, seen for the first time in the past month who meets the case definition, regardless of country of birth. The reporting instructions were extended in 2005 to include reports of children born abroad: this has been instituted as part of the enhanced surveillance necessary to monitor progress towards the European elimination target.

Additional sources of data

No active additional sources, but reports are occasionally made direct to the investigator (e.g. from virologists, audiologists), and there is close liaison with the HPA, HPS and the Health Protection Surveillance Centre in Ireland.

Expected number

Currently fewer than five births a year in the UK and Ireland, but this number could increase if there were renewed circulation of rubella infection in the community. Rubella-associated terminations of pregnancy are monitored through reports to the Office for National Statistics, but the annual number is not currently published because there are so few cases.

Analysis

Only one confirmed birth was reported in the UK in 2007. The infant's mother was born abroad, had lived in the UK for several years, but was probably infected while visiting her country of origin in early pregnancy. There were nine BPSU reports in 2007, three of which related to the confirmed case; one report was of an older child (>10 years) who was born abroad, and the other five were made in error.

The number of reported congenital rubella births and rubella associated terminations declined from, on average, 50 births and 740 terminations a year in 1971-75 to 22 births and 54 terminations a year in 1986-90.

Since the beginning of active surveillance in 1990, 165 reports have been made through the BPSU (Table 6). Of the 144 reports from England, Scotland and Wales, 51 are confirmed or compatible, previously unreported cases of congenital rubella, four are possible cases, and 13 had already been reported from another source; the remaining reports were: duplicates (25), reporting errors (46), and five where further information could not be obtained. Sixteen reports were from Northern Ireland or Ireland, and included four children with confirmed congenital rubella (one born in 1989, two in 1996 and one in 2004), and a fifth possible case (born in 1983); the other eleven Irish reports were duplicates, errors or previously reported.

Since the reporting definition was extended in 2005, five reports have related to four children who were born abroad. In previous years reports of foreign-born children were not requested, and any such reports were categorised as errors. These four children are not included in Table 6 since the main aim of the surveillance is to monitor births in the UK or Ireland. However, the data are useful at a European level, and we appreciate these reports.

Congenital rubella births in the UK or Ireland 1990-2007: Fifty-nine children and three stillborn infants with confirmed or compatible congenital rubella have been born and reported since the beginning of active surveillance in 1990; 47 of these (77%) were first reported through the BPSU (Table 7). Fifteen of these infants were born in the last 10 years, including one born in Ireland, and one stillborn infant. Although 10 were imported cases with maternal infection acquired abroad (five in Southern or South Eastern Asia, five in Africa), five infants were born to women whose infection occurred in the UK. Five maternal infections were acquired in England or Scotland, two by British-born women, and three by women who were born abroad, but who had all been resident in the UK for several years.² There were over 80 terminations for rubella disease or contact in pregnancy recorded

Table 6. Congenital rubella reports to BPSU 1990-2007 (includes births occurring in earlier years)

	Confirmed or compatible	Possible cases	Cases already reported	Duplicate, error or lost	Total
Place of birth					
England, Scotland and Wales	51	4	13	76	144
NI and Ireland	4	1	2	9	16
Born abroad (reports 2005-2007 only)	2	2	0	1	5
Total	57	7	15	86	165

Table 7. Confirmed and compatible congenital rubella births reported in the UK and Ireland 1990-2006

year of birth	Primary source of notification		Total
	BPSU	Other	
1990-94 [^]	22	10	32
1995-99	12	4	16
2000-04*	10	1	11
2005-07	3	0	3
Total	47	15	62

by the Office for National Statistics in England and Wales since 1990, but annual data are no longer published since the numbers are so low.

Please note the data presented are provisional, not peer reviewed and definitive conclusions should not be drawn from them.

Discussion

The number of reported cases of congenital rubella has remained at a very low level over the last ten years, but virtually all reports concern infants with serious rubella-associated defects present at birth (Figure 12). It is possible that some infants with less obvious signs of congenital rubella, or those with later onset, are not diagnosed and reported.

Rubella susceptibility in pregnant women in the UK varies by ethnic group, with women from many parts of Asia and Africa having particularly high susceptibility rates especially if they are having their first baby.³ Women originating from countries without comprehensive and long-standing vaccination programmes are likely to be at higher risk if there is renewed circulation of rubella here. Even while rubella infection is rare in the British Isles, susceptible women who travel abroad during early pregnancy may come into contact with infection. Awareness of rubella infection and congenital rubella among paediatricians and other health professionals must be maintained.

Please continue to look out for and notify all infants with suspected congenital rubella, whether or not they have the associated typical defects, and regardless of country of birth.

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Ethics approval

The London Multicentre Research Ethics Committee reaffirmed approval in 2005 (Ref:

05/MRE02/2). Surveillance of congenital rubella through the BPSU also has PIAG approval (PIAG/BPSU 2-10(f)/2005).

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