

Candidaemia reports, England, Wales, and Northern Ireland: 2003

Key points:

- There were 1380 reports of *Candida* spp blood isolates in England, Wales, and Northern Ireland in 2003, made via the voluntary laboratory reporting system.
- Candidaemia reports are continuing to increase, with an increase in rate from 2.31/100,000 in 2002 to 2.53/100,000 in 2003.
- *Candida albicans* accounted for 54% of candidaemia reports, with other common species including *C. glabrata*, and *C. parapsilosis*.

Introduction

This report covers microbiological identifications of *Candida* spp blood isolates reported on a voluntary basis to the Health Protection Agency's Communicable Disease Surveillance Centre (CDSC) from laboratories in England, Wales, and Northern Ireland. These data were extracted on 20 August 2004. Late submission of reports from 2003 may occur and, as such, data reported remain provisional.

Rates were calculated using 2003 mid-year resident population estimates based on the 2001 census for England, Wales, and Northern Ireland. Regional analyses were made with reference to the Government Office Regions introduced in April 2002.

Results

There were 1380 reports made of *Candida* spp isolated from blood specimens in England, Wales, and Northern Ireland in 2003 (table 1) from 171 laboratories. *Candida albicans* was the most commonly reported species with 752 reports, 54% of the total. This was followed by *C. glabrata* which accounted for 16% of candidaemias, and *C. parapsilosis* (11%). An additional 11% of isolates were reported to CDSC as *Candida* spp only.

The greatest number of reports were received from the London region, which accounted for 14% of the total (190 reports), with the North West accounting for the

second highest with 13% (174 reports, table 2). Wales reported the fewest number of cases, accounting for 4% of reports.

The overall rate of candidaemia reports in England, Wales, and Northern Ireland in 2003 was 2.53 per 100,000 population (95% CI: 2.40-2.67). The region-specific rates of candidaemia reports (figure 1) were highest in Northern Ireland at 4.35/100,000, followed by the West Midlands at 3.18/100,000. The lowest rate of candidaemia was observed in Wales, at 1.77/100,000.

The highest age-specific rates were in males aged 75 years and over, at 10.76/100,000, nearly double the rate for females (5.45/100,000) in this age group (figure 2). This was closely followed by those aged under 1 year in both males (9.61/100,000) and females (9.83/100,000). The lowest rates were in those aged between 5 to 14 years.

Discussion

The rate of reported candidaemia is continuing to increase, from 1.94/100,000 in 2001 (1) (England and Wales only), to 2.31/100,000 in 2002 (2), and 2.53/100,000 in 2003. This may be due in part to improved ascertainment, but follows an increase reported previously in England and Wales (3) and in other countries (4-6). Analysis of national laboratory surveillance data in Finland observed an incidence of

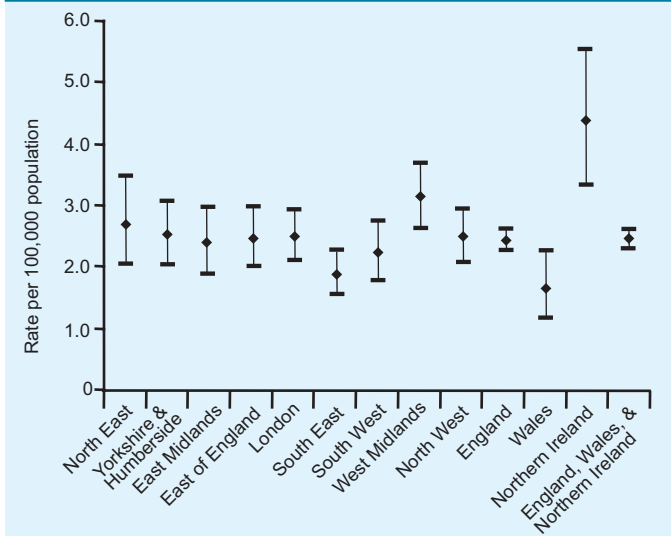
Table 1 Laboratory reports of candidaemia, England, Wales, and Northern Ireland: 2003

	Number or reports	%
<i>Candida albicans</i>	752	54.5
<i>Candida famata</i>	7	0.5
<i>Candida glabrata</i>	224	16.2
<i>Candida guilliermondii</i>	13	0.9
<i>Candida kefyr</i>	1	0.1
<i>Candida krusei</i>	25	1.8
<i>Candida lusitanae</i>	10	0.7
<i>Candida parapsilosis</i>	150	10.9
<i>Candida tropicalis</i>	41	3.0
<i>Candida</i> spp - species not recorded	145	10.5
<i>Candida</i> spp - other named	12	0.9
Total	1380	100

Table 2 Laboratory reports of candidaemia by region, England, Wales, and Northern Ireland: 2003

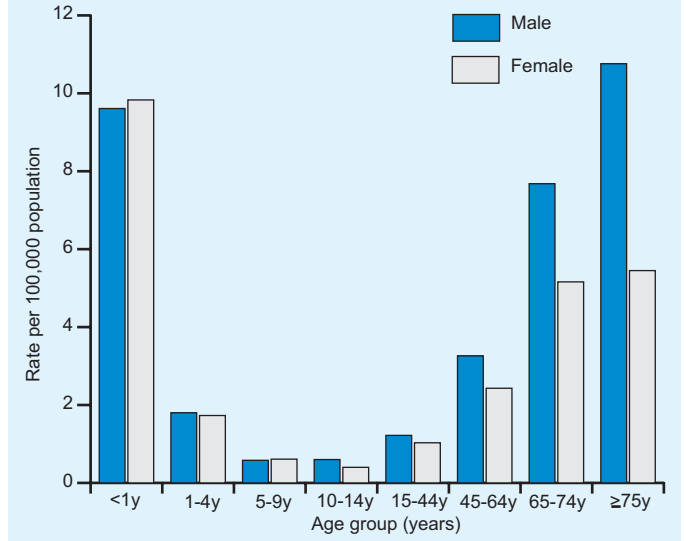
	Number of reports	%
North East	70	5.1
Yorkshire & Humberside	130	9.4
East Midlands	105	7.6
Eastern	139	10.1
London	190	13.8
South East	161	11.7
South West	116	8.4
West Midlands	169	12.2
North West	174	12.6
England	1254	90.9
Wales	52	3.8
Northern Ireland	74	5.4
England, Wales, and Northern Ireland	1380	100

Figure 1 Region-specific rates* of candidaemia with 95% confidence intervals, England, Wales, and Northern Ireland: 2003



*Rates calculated using 2003 mid-year resident population estimate based on 2001 census. Source: the Office for National Statistics Population Estimates Unit.

Figure 2 Age-specific rates* of candidaemia per 100,000 population, England, Wales, and Northern Ireland: 2003



*Rates calculated using 2003 mid-year resident population estimate based on 2001 census. Source: the Office for National Statistics Population Estimates Unit.

2.2/100,000 in 1999 (6), similar to that found in England and Wales. Candidaemia was the ninth most commonly reported bloodstream infection in England, Wales, and Northern Ireland in 2003 (7), but *Candida* species remain relatively less common bloodstream pathogens than in other areas of the world such as Japan (4) and the United States (US) (5) where they rank fourth.

The relative contribution of different *Candida* species varies between countries, although *Candida albicans* is still the most common pathogenic species involved in invasive disease, followed by *C. glabrata*, and *C. parapsilosis* (4,5,8). Recent studies in Japan and the US have found non-*albicans* species to be responsible for 59% (4) and between 51% and 55% (5) of their candidaemia episodes respectively, but in the United Kingdom and Europe (8) they remain responsible for less than half. The relative proportion of candidaemia reports involving *C. albicans* increased in 2003, with a simultaneous decrease in *C. glabrata* reports, a reverse of the pattern described in 2001 and 2002 (1-3).

There remains a sizeable proportion of reports (10.5%) in which *Candida* genus alone is recorded, though this is slightly better than the 11.4% described last year (2). It is important to be able to monitor trends according to species as antifungal susceptibility varies accordingly. This is particularly true for *Candida krusei* which is innately resistant to fluconazole (9) and *C. glabrata* which may demonstrate reduced susceptibility or resistance to this drug (5).

Only three reports were made of *C. glabrata* bloodstream infection in children in 2003, consistent with findings indicating this to be a more common pathogen in older age groups (8), with species such as *C. parapsilosis* being relatively more common in infants (10,11). Candidaemia was more commonly reported in males than females, a phenomenon also observed in a recent Finnish study (6). The gender discrepancy

reported here was particularly pronounced in those aged over 75 years, where the rate in males increased to nearly double that in females and for the first time exceeded the rate in those aged under one year (1-3).

As found in 2002 (2), rates differ between regions and countries, most notably between Northern Ireland and Wales. This may be due to reporting bias, as in some regions/countries data ascertainment is more complete. Rates were calculated in this report using resident population denominators, however, candidaemia primarily occurs in hospitalised patients (3) and as such the regional variations may be partly attributable to regional differences in numbers of vulnerable patients according to the distribution of treatment centres.

Acknowledgments

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