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Differences in treatment likely to be behind differing survival rates for blood cancers between regions within Europe

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Failure to get the best treatment and variations in the quality of care are the most likely reasons why survival for blood cancer patients still varies widely between regions within Europe, according to the largest population-based study of survival in European adults to date, published in *The Lancet Oncology*.

"The good news is that 5-year survival for most cancers of the blood has increased over the past 11 years, most likely reflecting the approval of new targeted drugs in the early 2000s such as rituximab for non-Hodgkin lymphoma and imatinib for chronic myeloid leukaemia", explains study leader Dr Milena Sant from the Fondazione IRCCS Istituto Nazionale dei Tumori in Milan, Italy.

"But there continue to be persistent differences between regions. For example, the uptake and use of new technologies and effective treatments has been far slower in eastern Europe than other regions. This might have contributed to the large differences in the management and outcomes of patients."*

The EUROCARE study analysed data from 30 cancer registries* covering all patients diagnosed in 20 European countries to compare changes in 5-year survival for more than 560 400 adults (aged 15 years and older) diagnosed with 11 lymphoid and myeloid cancers between 1997 and 2008, and followed up to the end of 2008.

Some blood cancers have shown particularly large increases in survival between 1997 and 2008—eg, follicular lymphoma (59% to 74%), diffuse large B-cell lymphoma (42% to 55%), chronic myeloid leukaemia (32% to 54%), and acute promyelocytic leukaemia (50% to 62%).

The greatest improvements in survival during 1997-2008 have been in northern, central, and eastern Europe, even though adults in eastern Europe (where survival in 1997 was the lowest) continue to have lower survival for most blood cancers than elsewhere.

But survival gains have been lower in southern Europe and the UK. For example, improvements in 5-year chronic myeloid leukaemia survival in northern (29% to 60%) and central Europe (34% to 65%) have been persistently higher than in the UK (35% to 56%) and southern Europe (37% to 55%). For more detailed findings for all cancers by European area see table 4 on page 6 and figure 2 on page 6.

The risk of death within 5 years from diagnosis fell significantly for all malignancies except myelodysplastic syndromes between 1997 and 2008. But not all regions have seen such improvements. For example, compared with the UK, the excess risk of death was significantly higher in eastern Europe than in other regions for most of the cancers investigated, but significantly lower in northern Europe. For more detailed findings for all cancers by European area and age see table 5 on page 7.

The authors suggest that the most likely reasons for continuing geographical differences in survival are inequalities in the provision of care and in the availability and use of new treatments.

"We know that rituximab, imatinib, thalidomide, and bortezomib were first made available for general use in Europe in 1997, 2001, 1998, and

2003, respectively. The years following general release of these drugs coincided with large increases in survival for chronic myeloid leukaemia, diffuse large B-cell lymphoma, and follicular lymphoma; with a smaller but still significant survival increase for multiple myeloma plasmacytoma.", say the authors.

However, they point out that uptake and use of these drugs has not been uniform across Europe. For example, market uptake of rituximab, imatinib, and bortezomib was lower in eastern Europe than elsewhere and might explain the consistently lower survival in this region.

According to Sant, "High resolution studies that use clinical records to collect detailed clinical information for representative samples of cancer registry cases can more directly link treatments and clinical characteristics to survival."

Writing in a linked Comment, Alastair Munro from the University of Dundee Medical School in Scotland questions whether these improvements in survival can just be attributed to the drugs, saying that, "Better understanding of the conclusions from EUROCARE-5 requires additional information about changes over time (and space) affecting: survival according to the broad categories of disease (Hodgkin's lymphoma, non-Hodgkin lymphoma, leukaemias, myeloma, and other myeloid malignancies); the distribution of histological subtypes and their relation with the age distribution of the population; the distribution of stages at diagnosis; and the timing of active intervention for indolent tumours. …When making comparisons, whether across time or space, one should consider the effect of potential confounders. Is it all about the drugs? The answer is, not entirely."

More information: *The Lancet Oncology*, www.thelancet.com/journals/lan … (14)70282-7/abstract

*Northern Europe (Denmark, Iceland, and Norway), the UK (England, Northern Ireland, Scotland, and Wales), central Europe (Austria, Côte d'Or haematological, Saarland, Basel, Geneva, Grisons, St Gallen, Valais, and Netherlands), eastern Europe (Bulgaria, Estonia, Lithuania, Kielce, and Slovakia), and southern Europe (Ferrara, Modena, Parma, Ragusa, Romagna, Sassari, Torino, Malta, and Slovenia).

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