

ORIGINAL ARTICLES

Cancer Waiting Times: What is the Value of a Lymphoma Waiting Time?

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Abstract

Background and Aim

Waiting times for patients with lymphoma have been reported across the United Kingdom since 2005. Lymphoma however, is not a single disease but a wide spectrum of lymphoid tumours that range from the most malignant to the most indolent, from highly curable to incurable. We now question the value of the current system that reports lymphoma waiting time on a quarterly basis and makes no allowance for the different types of lymphoma.

Method

Four hundred and sixty nine cases of lymphoma were registered in the west of Scotland in 2004. Complete datasets were available on 428. Patient demographic data, subtypes of lymphoma, biopsy site and referral urgency data were linked to the waiting times analysis for 2004 for the three major lymphoma subtypes, Hodgkin Lymphoma (HL), Diffuse Large B Cell (DLBC) and follicular Non Hodgkin Lymphoma (NHL).

Results

Patients with HL were younger, more likely to receive urgent referral and have a diagnosis made from neck node biopsy than the other two groups. Patients with DLBC NHL however had the shortest interval between presentation and the start of treatment and were subsequently more likely to receive treatment within 62 days than patients with either follicular NHL ($p < 0.001$) or HL ($p < 0.05$).

Conclusion

Lymphoma subtype is a major factor determining the rate of progress from presentation to the start of treatment, hence the waiting time.

Their value however requires consistency in the way data is collected and similarity between those clinical cases for which any particular waiting time is generated.

The United Kingdom (UK) standard for cancer and lymphoma waiting times requires that the maximum wait from urgent referral to treatment for all cancers should be two months (equivalent to less than 63 days).^{2,3} Waiting times for patients with lymphoma have been reported quarterly across the UK since 2005.

Lymphoma

Blood cancer is the fifth major cancer and accounts for 7% of UK cancers.⁴ Lymphoma is the most common and accounts for approximately 50% of the total. The term lymphoma covers a wide range of related blood cancers, which share a common origin in malignant lymphocytes. They may be subdivided on histological appearance as either Hodgkin lymphoma (HL) or non Hodgkin lymphoma (NHL). Patients with HL represent approximately 15-20% of all cases of lymphoma.⁵ Cases of NHL may be further subdivided on morphological features and grade of malignancy. Although there are 48 different types of NHL the largest two subgroups are high grade Diffuse Large B Cell (DLBC) NHL which represents approximately 40% of cases⁶ and low grade follicular NHL which represents about 25% of cases. The number of patients with lymphoma is rapidly growing and it is predicted that the incidence of NHL will increase 71.4% over the next 20 years.⁷

There are important clinical differences between these lymphomas. HL is generally recognised to occur in two age peaks, one that affects adolescents and young adults with a second peak in later life. Adults and elderly patients are, however, approximately five times more likely to develop NHL than HL. Although most lymphomas present with painless lymphadenopathy, between 30 and 40% of cases of NHL have an extranodal origin.⁶ Chemotherapy (+/- radiotherapy) can achieve high rates of cure for both HL⁸ and DLBC NHL,⁹ whereas follicular lymphoma is generally regarded as incurable.¹⁰ It is then often appropriate to adopt a 'watch and wait' policy before introducing chemotherapy, as follicular NHL is an indolent disease characterised by multiple relapses and progressive resistance to chemotherapy.¹¹

We have examined the referral pattern, age, use of neck node biopsy for diagnosis and waiting times for patients presenting with lymphoma in the west of Scotland in 2004. We examine the value of the current system that reports a quarterly, all-inclusive lymphoma waiting time that makes no allowance for the different types of lymphoma.

Introduction

Waiting times are perhaps the most widely publicised measure of health service performance. They receive extensive media attention, are widely available for general public inspection and comment, and carry considerable political importance.¹

Materials and Methods

National Lymphoma Dataset for Scotland

The west of Scotland has 2.7m residents and contains almost 60% of the Scottish population. The National Lymphoma Dataset for Scotland has been approved by the Scottish Blood Cancer Group and includes details on referral pathway, pathology, prognostic features, disease extent, site of diagnostic biopsy and patient demographics. The West of Scotland Blood Cancer Managed Clinical Network (MCN) has collected the national dataset on all patients registered with lymphoma in the region since January 2004.

In 2004, 469 cases of lymphoma were registered and 428 complete datasets collected. Patient demographic data, subtypes of lymphoma, use of neck node biopsy for diagnosis and referral urgency data were linked to the waiting times analysis for 2004 for the three major lymphoma subtypes, HL, DLBC and follicular NHL.

Waiting Times Analysis

Urgent referral, as reported in the national analysis of waiting times and used in this analysis, includes those patients with urgent referral from their general practitioner (GP) and those referred acutely to hospital (including self-referrals) as either surgical or medical emergencies. All other referrals represent non-urgent GP referrals, patients already under review, identified at screening or diagnosed with lymphoma as an incidental finding. The waiting time was calculated as the interval in days between referral and either the start of treatment or decision to 'watch and wait'.

Statistical Analysis

For statistical analysis Mann Whitney U-Test was used to compare medians and ranges, chi-square test to compare referral urgency and ability to meet waiting times targets.

Results

Lymphoma Subtype

Pathological diagnosis was available on 456 out of 469 lymphoma cases. Seventy three (16%) were HL and 383 (84%) were NHL. Of the NHL, there were 104 (27%) follicular and 170 (44%) DLBC. Of these cases, we had complete data on 64 HL, 80 follicular and 136 DLBC.

Lymphoma Subtype and Patient Age

Patients with HL were significantly younger (median 45 years) than patients with NHL (median 68 years, $p < 0.001$). Patients with follicular NHL were slightly younger than patients with DLBC NHL (63 years vs 71 years, $p < 0.01$).

Lymphoma Subtype and Urgency of Referral

Patients with either HL or DLBC were significantly more likely to receive urgent referral (51/64, 80% and 105/136, 77%, respectively) than patients with follicular NHL (45/80, 56%, $p < 0.05$). Table I.

Lymphoma Subtype and Diagnostic Neck Node Biopsy

Neck node biopsy was the chosen site for primary diagnosis in 34% (95/280) of cases. This differed between the three subtypes

with 23% (31/136) of DLBC NHL, 35% (28/80) of follicular NHL and 58% (37/64) HL. Diagnostic neck node biopsy was significantly more common in HL than in either follicular ($p < 0.01$) or DLBC ($p < 0.001$) NHL.

Urgency of Referral and Waiting Time

Urgent referral was associated with reduced median waiting time for patients with DLBC NHL (37 days versus 68 days, $p < 0.001$). The waiting time for patients with follicular NHL or HL was not significantly influenced by urgent referral when compared with other forms of referral (72 days versus 91 days NS) and (60 days versus 90 days, NS) Table I.

Table I. Comparison of Nature of Referral and Waiting Time for Patients with HL, FL NHL and DLBC NHL.

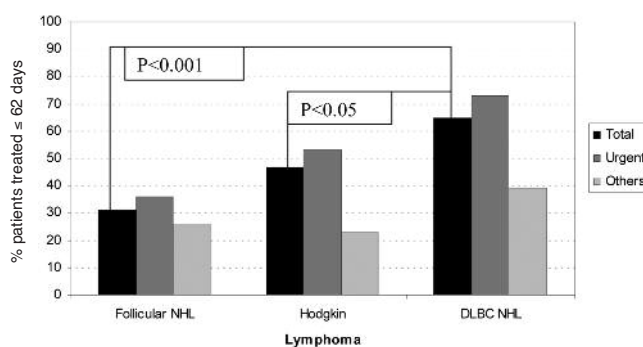
Diagnosis and type of referral	Total	Treatment started < 63 days from referral		Median wait days (range)	Mann-Whitney U-Test
		No	%		
HL: Urgent	51	27	53	60 (12-212)	NS
HL: All other referrals	13	43	23	90 (15-358)	
HL: Total	64	30	47	65 (12-358)	
FL NHL: Urgent	45	16	36	72 (17-411)	NS
FL NHL: All other referrals	35	9	26	91 (14-400)	
FL NHL: Total	80	25	31	80 (14-411)	
DLBC NHL: Urgent	105	77	73	37 (1-215)	$p < 0.001$
DLBC NHL: All other referrals	31	12	39	68 (16-211)	
DLBC NHL Total	136	89	65	44(1-215)	

NS = not significant

Lymphoma Subtype and Waiting Time

Patients with DLBC NHL had the shortest median wait and were significantly more likely to receive treatment within 62 days (44 days, 89/136, 65%) than patients with follicular NHL (80 days, 25/80, 31%, $p < 0.001$) or HL (65 days, 30/64, 47%, $p < 0.05$). Indeed patients with DLBC NHL who did not receive urgent referral were still as likely to be treated within 62 days of referral (12/31, 39%) as patients with follicular NHL who received urgent referral (16/45, 36%). Despite a high percentage of urgent referrals (80%), only 47% of patients with HL started treatment within 62 days. Table I, Figure 1.

Figure 1. Percentage of Patients Treated Within 62 Days of Referral by Lymphoma Subtype and Nature of Referral



Discussion

This study has directly compared the earliest stages in medical care pathways for patients with the three most common forms of lymphoma. It has shown significant differences with respect to patient age at presentation, referral pattern, the use of diagnostic neck node biopsy and the time taken to start treatment for patients with HL, DLBC NHL and follicular NHL.

The patient data collected for the complete year, 2004, was analysed in relation to the three main subtypes of lymphoma. National quarterly reporting, with small patient numbers in the various regions of the UK, makes no allowance for the different types of lymphoma.

Neck nodes are readily accessible to surgical biopsy and the introduction of neck lump clinics to facilitate diagnosis was the focus of NICE guidance to improve outcomes in haematological cancer.⁴ Patients with HL were most readily diagnosed from neck node biopsy ($p < 0.001$), were significantly younger than patients with NHL ($p < 0.001$), and had the highest number of urgent referrals (80%). These features however did not inevitably shorten the median wait (65 days) to start treatment and only 47% of HL patients commenced treatment within 62 days of referral. Neck lump clinics were not well established in the west of Scotland in 2004 and it may be that their introduction since 2004 will improve this figure.

Patients with DLBC NHL were significantly older than patients with follicular NHL ($p < 0.01$) and HL ($p < 0.001$), least likely to have diagnostic neck node biopsy, yet had the shortest wait to start treatment (44 days). They were also significantly more likely to receive treatment within 62 days of referral than either follicular NHL ($p < 0.001$) or HL ($p < 0.05$). It is then clear that the type of lymphoma rather than the patient age, referral pattern or diagnostic biopsy site is the major factor that influences clinicians to start treatment.

A huge financial and manpower effort is required to generate cancer waiting times.¹ With particular regard to lymphoma this effort is set to rise markedly in line with the predicted 71.4% increase in the incidence of NHL in the next 20 years.⁷ This analysis of lymphoma patients presenting in the west of Scotland during 2004 suggests that this effort is not well founded and that the present system for reporting lymphoma waiting times across the UK, one that makes no distinction for lymphoma subtype, has at best perhaps only limited value.

We would support a new system to report separately on these three major lymphoma types. In order to achieve adequate patient numbers we would suggest that the basis for lymphoma waiting time reporting should be annual rather than quarterly.

Competing Interest

There were no competing interests.

References

1. Scottish Executive. Cancer Waiting Times. Press Release 27th January 2006. Available at <http://www.scotland.gov.uk/News/Releases/2006/01/27123931> (Accessed 3rd June 2008)
2. Department of Health. The NHS Cancer Plan: a Plan for Investment: a Plan for Reform. London: Department of Health, 2000. Available at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009609 (Accessed 4th June 2008)
3. Scottish Executive. Cancer in Scotland: Action for Change. Edinburgh, Scottish Executive, 2001.
4. National Institute for Clinical Excellence. Improving Outcomes in Haematological Cancers. London: NICE, 2001. Available at <http://www.nice.org.uk/guidance/index.jsp?action=byID&r=true&o=10891> (Accessed 4th June 2008)
5. Jaffe ES, Harris NL, Stein H et al. Pathology and Genetics of Tumours of the Haemopoietic and Lymphoid Tissues. (World Health Organisation Classification of Tumours) Albany NY: WHO Publications, 2001.
6. Magrath IT. The Non-Hodgkin's Lymphomas. 2nd ed. London: Arnold, 1997.
7. Scottish Executive. Cancer in Scotland: Sustaining Change. Cancer Incidence Projection for Scotland 2001-2020. Edinburgh : Scottish Executive, 2004 Available at <http://www.scotland.gov.uk/Resource/Doc/25954/0013325.pdf> (Accessed 4th June 2008)
8. Canellos GP, Anderson JR, Propert KJ et al. Chemotherapy of advanced Hodgkin's Disease with MOPP, ABVD or MOPP alternating with ABVD. *N Engl J Med*; 1993; 327: 1478-1484.
9. Coiffier B, Lepage E, Briere J et al. CHOP chemotherapy plus rituximab compared with CHOP alone in elderly patients with diffuse large B-cell lymphoma. *N Engl J Med* 2002; 346: 235-242
10. A clinical evaluation of the International Lymphoma Study Group classification of non-Hodgkin's lymphoma. The Non-Hodgkin's Lymphoma Classification Project. *Blood* 1997; 89: 3909-3918
11. Ardeschna KM, Smith P, Norton A et al. Long term effect of a watch and wait policy versus immediate systemic treatment for asymptomatic advanced stage non-Hodgkin's lymphoma; a randomised clinical trial. *Lancet* 2003; 362: 516-522.