Lung cancer: histological aspects of diagnosis in England and the south east Netherlands

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Histological confirmation of lung cancer ensures that non-malignant conditions that mimic it can be recognised and treated, and appropriate treatment for the type of cancer that is present is given. To ascertain how this principle of management is reflected in routine practice, a study has been undertaken of Yorkshire Regional Cancer Registry data on patients residing in two health districts to examine the rate of histological diagnosis in comparison with what is achieved elsewhere.

Methods and results: Registry information was obtained on all 1218 patients with lung cancer registered between 1983 and 1986 whose consultants gave consent.

The overall rate of histological diagnosis was 49%. Data for each age group are shown in table 1, which shows that it is lower in older patients. Not all patients live long enough after presentation to allow investigation; 29·4% failed to survive 0·06 years (approximately three weeks). Data for those who lived longer are given in table 1. There were 643 patients aged less than 75 years and who survived more than 0·06 years. A histological diagnosis was reached in 433 (67·3%; 95% CI 63·7, 71·0%). Again, there was a significant reduction in the rate of diagnosis above the age of 65 years.

Database accuracy was assessed by randomly selecting the casenotes of 97 patients recorded as having had no histological diagnosis. Of these, 57 had undergone brochoscopy (58%; 95% CI 48·2, 67·8%). Tissue had been sent from 34 (35·1%; 95% CI 25·6, 44·6%) but no histological diagnosis had been made.

A histological diagnosis had been obtained but not recorded in eight of the 97. This finding can be extrapolated for the remaining 524 patients registered as having no histological diagnosis, but not verified as such, to imply that 43 were in fact confirmed. This would bring the overall diagnosis rate to 53·2%.

The five year survival statistics were compared with data from the south east Netherlands, in the format used by Coebergh.[1] There is a large difference between survival figures for all patients (percentages (95% CI), 5·8 (4·6, 7·3) in Yorkshire and 13·2 (11·9; 14·5) in SE Netherlands) which becomes smaller (10·2 (7·7, 12·8) and 12·5 (11·1, 13·9) respectively) when cases confirmed to be squamous carcinoma, adenocarcinoma, or small cell lung cancer (SCLC) only are considered.

Discussion: We have examined clinical practice by relating the rate of histological diagnosis to the age and short term survival of the patient and by comparing this with what happens in a neighbouring industrialised European country, thus contributing further information to that given in previous reports.[2 3]

The best management decisions depend on histological diagnosis while the patient is well enough to receive treatment. The overall histological diagnosis rate is similar to the 51% obtained in Mersey 1986.[3] In the whole Yorkshire region, 58·4% of cases were confirmed in 1983, rising to 60·4% in 1988–90.[5] These compare unfavourably with the SE Netherlands, where between 1975 and 1986, 94–96% of diagnoses were confirmed.[1]

An audit of cancer registration data showed that the rate of serious errors was 4%,[4] low enough not to affect conclusions drawn from the data and thereby allowing these comparisons to be made. Coebergh[1] found the Dutch survival figures were close to those from Finland, Switzerland, and the USA, so they are not unusually high. English patients may be more carefully selected for investigation than the Dutch. If this were the case, overall survival would not differ between countries and the survival of histologically confirmed patients would be greater in England because very ill patients would be excluded. Since neither of these apply, other explanations, including the possibility that people with lung cancer are managed less effectively in England must be considered.

The rising trend[5] in the rate of histological diagnosis is consistent with there being avoidable reasons for failing to achieve this. Two are suggested by these data. Firstly, many patients survived less than three weeks, emphasising the need to encourage early recognition of the disease. Secondly, the lower rate of diagnosis after the age of 64 years suggests an influence of age on attitudes to lung cancer, which may discourage early presentation. Even when elderly and unfit patients are excluded from analysis, only two thirds of patients in this study had a histological diagnosis.

These findings show a potential for improving the outcome of lung cancer, but more professional and public eduction is needed.

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Table 1 Relationship between age and numbers of patients with histological diagnoses

Age group	*Total*	*No (%) with histological diagnosis*	*95% confidence interval*
All patients:			
<60	239	157 (65·7)	59·7, 71·7
60–64	205	141 (68·8)	62·4, 75·1*
65–69	187	101 (54·0)	46·9, 61·2
70–74	231	111 (48·1)	41·6, 54·5
>=75	356	87 (24·4)	20·0, 28·9*
Total	1218	597 (49)	46·2, 51·8
Patients surviving ⩾0·06y:			
<60	197	142 (72·1)	65·8, 78·3
60–64	145	116 (80·0)	73·5, 86·5
65–69	143	78 (54·5)	46·4, 62·7*
70–74	158	97 (61·4)	53·8, 69·0
>=75	217	69 (31·8)	25·6, 38·0*
Total	860	502 (58·4)	55·1, 61·7

*95% confidence interval does not overlap with the younger age group.

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Socioeconomic status: developing a quantitative, community based index in rural Kashmir

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The concepts of socioeconomic status (SES) and social class, and their relation to differential rates of death and disease in developed countries, are essential to understanding the social nature and context of sickness and health care in western societies.[1 2] The operational concept of socioeconomic status, however, and how it relates to disease is often ambiguous. In many developing countries, where local economies differ from western industrial economies, socioeconomic status measured by western concepts (for example, monetary income) may be irrelevant and inaccurate.[2] Culturally appropriate, community based socioeconomic indices that reflect differential access to economic assets could elucidate control of the *stock* of wealth, rather than the *flow* of wealth.[2] Furthermore, such indices would enhance the utility of integrating concepts from medical anthropology and social epidemiology in addressing health research in developing countries. These measures subsequently could be used in epidemiological analyses of morbidity and mortality in developing countries.

Socioeconomic status has been directly implicated in the epidemiology of childhood diarrhoea in other studies,[3] and indirectly implicated with diarrhoea as a correlate of other sociocultural risk factors.[4 5] We were interested in investigating the relationship between access to useful village economic resources (for example, livestock) and the prevalence of childhood diarrhoea in a remote Kashmiri Himalayan village.

Methods: This study was conducted in one of several isolated villages of the Kashmiri Himalayas. Mothers in 23 households were interviewed about their children's health, particularly their children's recent diarrhoeal history, and about household land and animal ownership. To ascertain a measure of socioeconomic status, we constructed an index based on ownership of the two most economically productive animals in this region – cows and sheep. Households were divided into three groups according to ownership of more or less than the median number of cows and sheep for the village (table). Diarrhoeal history was provided by the mothers using critical events anchoring to retrospectively measure childhood diarrhoea during the previous three months. Because of the difficulties associated with retrospective recall of diarrhoeal episodes, we structured questions to assess prevalence using conceptually useful time anchors (for example, has the child had diarrhoea since Ramadan) rather than actual time frames of interest (for example three months before the interview). Although we had a working knowledge of some of the local vocabulary, we used an interpreter fluent in English, Kashmiri, and the local dialect and taped interviews to verify translation accuracy with other interpreters. Our project, conducted with the cooperation of the Sher-I-Kashmir Medical Institute, was approved by the SUNY-Buffalo Institutional Review Board.

Socioeconomic status (SES) construction and household diarrhoea prevalence

SES category	*Animal ownership*	*No in category*	*1+ children with diarrhoea**	*OR*
High	≥2 cows and ≥3 sheep	7	85·7 (6)	3·6
Middle	≥2 cows or ≥3 sheep	8	75·0 (6)	1·8
Low	<2 cows and <3 sheep	8	62·5 (5)	1·0

* Diarrhoea in household children within the prior three months.

Results: As shown in the table, seven households were considered high SES, eight were considered low SES, and the remaining eight households represented middle SES.

The prevalence of childhood diarrhoea in the previous three months was highest among children in the high SES group (OR = 3·6), followed by children in the middle SES group (OR = 1·8), and finally by children in the low SES group (OR = 1·0). Furthermore, boys were more likely to have had diarrhoea during the prior three months than were girls (54·3% and 32·7%, respectively).

Discussion: The prevalence of childhood diarrhoea in this Kashmiri village was highest among children in the "wealthiest" households. This finding is partially explained by the construct of the SES index itself: children, particularly boys, in high SES households were exposed to more animals and therefore to more parasites which cause diarrhoea. Furthermore, as the typical Kashmiri house is a three storey dwelling with the animals housed on the first floor, children in high SES families (or, families with a greater number of animal resources) are at highest risk of diarrhoea. Kashmiri boys, who are responsible for much of the animal care, are at highest risk for diarrhoea in this village. The prevalence of childhood diarrhoea in this area, therefore, was associated with greater animal exposure and therefore with greater control of economic resources. We con-