

THE EARLY MORTALITY FROM COLORECTAL TUMOURS

1969 - 1972

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In order to compare the mortality from colorectal tumours in our Islands with that in other centres, the survival of patients with large bowel tumours from the cases recorded in the Tumour Registry between the years 1969 to 1972 was studied. It was only possible to follow up the patients till July 1973. The deaths occurring up to this period will be discussed in relation to the time in which they occurred and to their causes.

There was no significant variation in the sex of yearly mortality rate (Figures 1 and 2) for either carcinoma of the colon or the rectum. There were in all a hundred deaths in the hundred and seventy three cases surveyed; sixty seven of whom died less than six months after their tumour was diagnosed.

The only information as to the cause of death was obtained from the death certificates. Necropsy reports were singularly lacking.

As expected mortality rates were highest in the seventh and eighth decades. Surprisingly, however, fourteen out of twenty four patients in the younger age group (i.e. under forty five years of age) also died within this period of the survey. The longest survival was in patients in their early sixties for both sexes.

About one third of the patients died

Histogram to show the sex incidence and the mortality rate in carcinoma of the colon

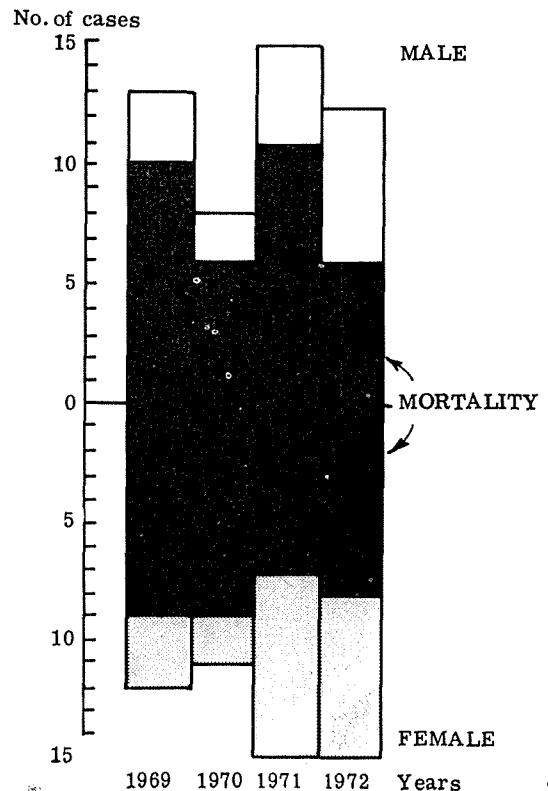


Figure 1

within a month of diagnosis (Table 1). All of these patients, with the exception of two who refused surgery underwent a laparotomy, and when indicated, a palliative or a definitive large bowel resection was performed. Fifteen of these patients had very poor general health from the start, either because of disseminated malignancy, or because of associated severe cardio-respiratory insufficiency. In eleven of these patients who died within a month, cachexia and carcinomatosis were the recorded causes of death. Five patients developed clinical features of pulmonary embolism, two of myocardial infarction, four of pneumonia, and two died in left ventricular failure. In the other cases who died within the month complications which included renal failure, cardiac arrest, intestinal haemorrhage and peritonitis had developed. One of the conclusions which can be drawn from these figures is that the patients presented in such an advanced state of malignancy, that they could not derive any benefit from the aggressive surgical intervention necessary for the treatment of this tumour.

A similar observation can be made with reference to patients dying between one month and six months post-operatively. Thirty one patients in this group out of the thirty five who died had either tumours staged as Grade C (Dukes' grading = metastases in lymph nodes) or as Grade O (Dukes' grading = distant metastases e.g. hepatic). These patients were therefore poor risk patients as well, at the time of operation, and it is no surprise that they only survived their surgery by such a short time. The causes of death in the rest of this group were carcinomatosis in two cases, pneumonia in one case, pulmonary embolism from deep vein thrombosis in one

Histogram to show the sex incidence and the mortality rate in carcinoma of the rectum

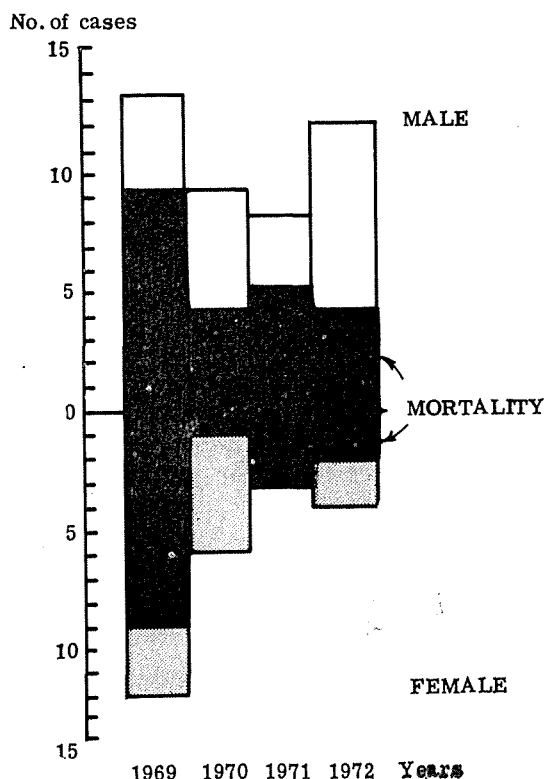


Figure 2

case, and congestive cardiac failure in a further case.

Those patients admitted with the clinical picture of an acute intestinal obstruction, and later discovered to have a carcinoma had a very bad prognosis: nine out of the ten patients who presented in this way died within six months. Some of them had to undergo both a defunctioning colostomy, and on a separate occasion a

TABLE 1

Mortality from Colorectal Tumours (1969-1972)

Cases	Deaths	Deaths timed after surgery		
		Less than a month	Less than 6 months	After 6 months
173	100	32*	35	30

*Two of these patients refused surgery.

(N.B. It was not possible to ascertain from the records the time when three of the patients died).

large bowel resection. At the time of the first laparotomy, a considerable number were found to have either perforated or 'leaked' at the site of the tumour, or proximal to it, with peritonitis. Because of this, closure of the colostomy and colectomy at a later date were often technically difficult. This may explain in part the poorer survival rate in these cases.

Local recurrence of the tumour with obstruction of the intestinal tract together with further vascular dissemination of the tumour were said to account for the vast majority of deaths occurring in the late post-operative period. The survival rates over the four years of the survey are shown in Table 2.

TABLE 2
Survival Rates for Colon and Rectum

Years	Maximal Follow up	Colon	Rectum
1969	4 yrs.	24%	30%
1970	3 yrs.	21%	67%
1971	2 yrs.	40%	55%
1972	1 yr	47%	63%

An attempt has been made to tabulate the crude five year survival rates (Table 3) published from other centres in order to correlate these figures with our own.

The maximal follow up available of the patients in this survey is four years; it has been shown however that the majority of patients who develop metastases do so within three years of operation. (Royal Marsden Clinical Statistical Report 1972).

Discussion

Our survival figures for carcinoma of the rectum are marginally better than those for colonic cancer. However on the whole the mortality figures in the present series are high compared to the other series listed (Table 3). It is immediately apparent that our patients are at an advanced stage of malignancy at the time of operation. Aggressive surgery in these groups of individuals is not only futile but also contributes to an earlier demise. This is only too obvious when two thirds of the deaths

recorded in the survey occurred within six months of surgical treatment. In this context better pre-operative preparation of poor risk patients may have to be weighed against delay in surgery. Correction of anaemia and of gross electrolytic imbalance may be required. Closer selection of patients for the more radical surgical approaches may have to be considered. The amenities offered by an intensive therapy unit may also mitigate the early post-operative mortality.

Other forms of therapy may have to be considered in order to diminish tumour cell mass and allow for possible palliative surgery cases. In fact Morson (1969) claims that "anaplastic inoperable rectal cancers" can be made resectable by pre-operative irradiation. The five year survival for the pre-operatively irradiated carcinoma rectum cases in a survey was forty per cent against twenty seven point five per cent for those treated by surgery alone (Brady *et al* 1974). Post-operative irradiation has also been found to prevent pelvic recurrences in patients with low rectal carcinomas in whom local spread is extensive (Morson 1969).

Chemotherapy for advanced colorectal tumours with either hepatic and/or pulmonary metastases is worth consideration. The most effective chemotherapeutic agent in this respect is five fluorouracil (5 F.U.) (Ansfield, 1962; Leone 1974). Following administration by either the intravenous route or the oral route, an objective response as assessed by radiography and isotope scintiscanning of the liver and lung was observed in at least twenty five per cent of the cases (Leone 1974). In another study (Lahiri 1971) five fluorouracil was administered as an oral dose of fifteen milligrams per kilogram body weight per day for six days and thereafter as a single dose weekly: eleven of the fourteen patients treated responded, and in three of these there was a complete disappearance of the tumour on the scintiscan. Selective intraarterial perfusion of the liver has also been shown to be more effective (Burrows *et al* 1967).

Recent advances in hepatic surgery have made partial hepatectomies for local-

TABLE 3

Comparison of crude five-year Survival Rates in several large series

<i>Series</i>	<i>Number of cases</i>	<i>Crude five year survival rates Colon/Rectum</i>
Birmingham		
Slaney <i>et al.</i> (1971)	12,494	41%
Royal Marsden Hospital (1972) (clinical state report) (in press)		55-60%
St. Marks Hospital Morgan (1965)	477 (rectal tumours only)	50%
New York Cornell McSherry <i>et al.</i> (1969)	1,625	46.5%
Cleveland Clinic Turnbull <i>et al.</i> (1969)	896 (colonic tumours only)	46.9%
New York St. Luke's Kuehner <i>et al.</i> (1970)	329	49.4%
San Francisco California Galante (1967)	975	43.5%
National Cancer Institute Axtell <i>et al.</i> (1972)	44,227	32-45%
U. Iowa Hospital Liechty <i>et al.</i> (1968)	2,261	31.5%
U. Minnesota Gilbertsen <i>et al.</i> (1971)	1,884	30.7%
Temple U. & Natl. Cancer Inst. Shimkin <i>et al.</i> (1964)	3,127	28%
New Orleans Charity Hospital Falterman <i>et al.</i> (1974)	2,010 (all pts. with a histological diagnosis)	24%
New Orleans Charity Hospital Falterman <i>et al.</i> (1974)	923 (curative resections)	47%

ized liver metastases a possibility (Foster 1970). Such heroic surgical measures are obviously only possible in carefully selected patients and high-powered centres geared to the prolonged and intensive post-operative care of such patients.

There is scope for improvement in the years to come in the local management of large bowel cancers. The crux of the whole problem appears to be the delay between the commencement of symptoms and the surgical treatment. On this account the patients themselves may be partly to blame, minor symptoms are often ignored and not brought up for

medical advice. Education aimed at correcting this may be in order. General practitioners' delay in investigating minor bowel complaints in the middle aged or elderly patients may also have to be considered. The medical treatment of constipation or alteration in bowel habits should only take second place to endoscopy and radiological investigation.

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References

- ANSFIELD, R.J., SCHROEDNER, J.M. and CURRERI, A.R. (1962). *J.A.M.A.* 181:295.
- BRADY, L.W., ANTONIADES, J., PRASAVINICHAI, S., TORPIE, R.J., ASBELL, S.O. and GLASSBURN, J.R. (1974). *Cancer* 34 : 960.
- BURROWS, J.H., TALLEY, R.W., DRAKE, E.H. (1967). *Cancer* 20 : 1886.
- FOSTER, J.H. (1970). *Cancer* 26 : 493.
- GALANTE, M., DUNPHY, J.E. and FLETCHER, W.S. (1967). *Ann. Surg.* 165 : 732.
- GILBERSTEN, V.A. (1971). *Cancer* 27 : 143.
- KUEHNER, C.R., Nay, H.R., WEST, J.P. (1970). *Surg. Gynecol. Obstet.* 131 : 63.
- LAHIRI, S.R., BOILEAU, G. and HALL, T.C. (1971). *Cancer* 28 : 902.
- LEONE, L.A. (1974). *Cancer* 34 : 972.
- LIECHTY, R.D., ZIFFREN, S.E., MILLER, F.E., DENBESTEN, D.C.L. (1968). *Dis. Colon Rectum* 11 : 201.
- McSHERRY, C.K., Cornell, G.N. and GLENN, F. (1969). *Ann. Surg.* 169 : 502.
- MORGAN, N.C. (1965). *Annals of Royal College of Surgeons of England* 36 : 73.
- MORSON, B.C. (1969). *British Journal of Hospital Medicine* Nov.
- ROYAL MARSDEN HOSPITAL (1972). *Clinical Statistical report* (in press).
- SHIMKIN, M.B., CUTLER, S.J. (196). *Dis. Colon Rectum* 7 : 502.
- SLANEY, G., WATERHOUSE, J.A., POWELL, J. (1971). *British Society of Gastroenterology* 730.
- TURNBULL, R.B., KYLE, K., WATSON, F.R., SPRATT, J. (1969). *Annals of Surgery* Sept. 420.