

PEDIATRIC CANCER INCIDENCE IN IDAHO, 1982-1996

FOLLOW-UP - DESCRIPTIVE EPIDEMIOLOGY OF: LYMPHOCYTIC LEUKEMIA IN BANNOCK COUNTY MALES IN GEM COUNTY

Although relatively rare in comparison with cancer in older adults, cancer is the second leading cause of death in persons aged 1-14 years. The epidemiology of cancer among children differs markedly from that of adults, both in the patterns of anatomic sites involved and the predominant histologic types. Similar to adult cancers, the etiology of many childhood cancers remains unclear. The Cancer Data Registry of Idaho (CDRI) receives several requests per year from physicians and others for data on pediatric cancer incidence for the state of Idaho. In 1998, CDRI published a report describing the incidence of pediatric cancers in Idaho, with comparisons to U.S. data (NAACCR) and comparisons among health districts and counties in Idaho. The results demonstrated a strong similarity between pediatric cancer incidence in Idaho and the U.S. For no International Classification of Childhood Cancer (ICCC) grouping was there a statistically significant difference between the observed number of cases in Idaho and the expected number of cases based upon U.S. rates for whites. With few exceptions, there was little evidence of differences in pediatric cancer incidence by health district or county within Idaho. However, the small numbers of cases for many ICCC groupings, particularly when examined at the health district or county levels, make spatial trends difficult to interpret. Two results warranted additional descriptive epidemiologic analyses: lymphocytic leukemia in Bannock County, and total pediatric cancers among males in Gem County.

LYMPHOCYTIC LEUKEMIA IN BANNOCK COUNTY

From 1982-1996, there were statistically significantly more cases of lymphocytic leukemia diagnosed among Bannock County residents under 15 years of age than expected based upon rates for the state of Idaho (19 cases observed, 10.3 cases expected; $p = 0.018$). The age-adjusted incidence rate of lymphocytic leukemia was 65.84 cases per million person-years in Bannock County, and 35.52 cases per million person-years in the state of Idaho. For the years 1990-1994, the U.S. rate was 34.0 for all races, and 36.4 for whites.

Among the 19 cases diagnosed among Bannock County residents, 0-3 cases were diagnosed per year for the years 1982-1996 (see Table 1; chi-square test not significant). Table 2 shows the age distribution of cases (chi-square test not significant). Ten cases were among males, and nine were among females. Seventeen cases were among whites, and two were among Native Americans. One case was Hispanic.

PEDIATRIC CANCER AMONG MALES IN GEM COUNTY

From 1982-1996, there were statistically significantly more cases of total pediatric cancers diagnosed among male Gem County residents under 15 years of age than expected based upon rates for the state of Idaho (11 cases observed, 3.8 cases expected; $p = 0.004$). Gem County had the highest incidence of pediatric cancers among counties in Idaho. For both sexes combined, the age-adjusted incidence rate of pediatric cancers was 318.25 cases per million person-years in Gem County, and 147.19 cases per million person-years in the state of Idaho. For the years 1990-1994, the U.S. rate was 139.7 for all races, and 142.9 for whites.

Among the 11 cases diagnosed among Gem County residents, 0-2 cases were diagnosed per year for the years 1982-1996 (see Table 3; chi-square test not significant). Table 4 shows the age distribution of cases (chi-square test not significant). All cases were among white non-Hispanics. Table 5 shows the distribution of cases by ICCC grouping (chi-square test not significant).

CONCLUSIONS

From 1982-1996, there were statistically significantly more cases than expected of lymphocytic leukemia among Bannock County residents less than 15 years of age, and total cancers among male Gem County residents less than 15 years of age. Descriptive epidemiology of cases for the two areas showed no significant temporal, age, or other socio-demographic trend.

Table 1. Distribution of lymphocytic leukemia cases among Bannock County residents aged less than 15 years, 1982-1996, by year of diagnosis.

Year	Cases	Year	Cases	Year	Cases
1982	1	1987	0	1992	2
1983	1	1988	1	1993	0
1984	1	1989	1	1994	1
1985	3	1990	2	1995	1
1986	3	1991	1	1996	1

Table 2. Distribution of lymphocytic leukemia cases among Bannock County residents aged less than 15 years, 1982-1996, by age at time of diagnosis.

Age	Cases	Age	Cases	Age	Cases
0	0	5	0	10	1
1	0	6	1	11	2
2	0	7	2	12	2
3	3	8	1	13	3
4	1	9	1	14	2

Table 3. Distribution of total pediatric cancers among Gem County resident males aged less than 15 years, 1982-1996, by year of diagnosis.

Year	Cases	Year	Cases	Year	Cases
1982	1	1987	0	1992	1
1983	0	1988	1	1993	1
1984	1	1989	0	1994	1
1985	1	1990	2	1995	1
1986	1	1991	0	1996	0

Table 4. Distribution of total pediatric cancers among Gem County resident males aged less than 15 years, 1982-1996, by age at time of diagnosis.

Age	Cases	Age	Cases	Age	Cases
0	0	5	1	10	0
1	0	6	0	11	1
2	0	7	0	12	2
3	2	8	1	13	0
4	2	9	1	14	1

Table 5. Distribution of pediatric cancers among Gem County resident males aged less than 15 years, 1982-1996, by ICCC code.

International Classification of Childhood Cancers Grouping	Cases
All Cancers	11
Leukemias	4
Lymphoid leukemia	2
Acute non-lymphoid leukemia	1
Lymphomas and other reticuloendothelial	2
Non-Hodgkin's lymphoma	1
CNS & misc intracranial and intraspinal	3
Astrocytoma	1
Malignant bone tumors	1
Osteosarcoma	1
Soft tissue sarcomas	1