Current Trends

Reye Syndrome Surveillance — United States, 1987 and 1988

For the 1987 and 1988 surveillance years, 36 and 20 cases,* respectively, of Reye syndrome (RS)† were reported to the National Reye Syndrome Surveillance System. These years have the lowest number of cases reported since continuous national surveillance was established in December 1976 (Table 1). For both years, approximately 80% of reported patients had an antecedent illness within 3 weeks before onset of vomiting or neurologic symptoms. Eighteen RS patients in 1987 and nine in 1988 had respiratory illnesses; seven and four had varicella; three and two had diarrhea without respiratory symptoms. In both years, approximately 50% of cases occurred in January, February, and March—the peak months for respiratory viral infections, including varicella and influenza (type A[H1N1] in 1987 and type A[H3N2] in 1988).

In 1987, 17 (47%) of the 36 reported RS patients and, in 1988, 16 (80%) of the 20 patients were female; 33 (92%) and 19 (95%), respectively, were white, two (6%) and one (5%) were black, and one patient (3%) in 1987 was Asian. Seventeen patients each

*Reporting year begins December 1 of previous year. Data for 1988 are provisional.

†According to CDC's case definition, the following conditions must be met to be considered an RS case: 1) acute, noninflammatory encephalopathy documented by alteration in the level of consciousness and either a) a record (if available) of cerebrospinal fluid containing ≤8 leukocytes per mm^3 or b) histologic sections of the brain demonstrating cerebral edema without perivascular or meningeal inflammation; 2) hepatopathy documented either by biopsy or autopsy considered to be diagnostic of RS or by a threefold or greater rise in the levels of either serum aspartate aminotransferase, serum alanine aminotransferase, or serum ammonia; and 3) no more reasonable explanation for the cerebral or hepatic abnormalities.

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year were ≥5 years old, representing a 75% decline in the number of cases in this age group from 1986. Nineteen reported patients in 1987 and three in 1988 were <5 years old, representing a 42% and a 91% decline, respectively, in this age group from 1986.

Approximately 75% of patients in both 1987 and 1988 were admitted to hospitals in precomatose stages of RS—stages 0, 1, or 2.[§] In each year, stage 2 was the classification for the largest number of patients upon admission (47% and 55%, respectively), followed by stage 1 for 1987 (31%) and stages 0, 1, and 3 (10% each) for 1988. In 1987, the most severe phases of illness after hospitalization were stage 1 (25%), stage 2 (8%), stage 3 (8%), stage 4 (11%), and stage 5 (30%). Eleven percent of patients received treatment that precluded classification (i.e., they had received anesthetic or paralyzing agents in their treatment); the most severe stage was not reported for 7%. In 1988, 25% reached stage 1 only; 5% reached stage 2, 20% reached stage 3, 20% reached stage 5, and 30% received treatment that precluded classification.

The case-fatality rates for these 2 years were 29% and 30%, respectively, based on patients for whom short-term outcome was reported (35 [97%] of the 36 patients in 1987 and 17 [85%] of the 20 patients in 1988).

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[§]Clinical staging of encephalopathy in RS is based on the level of consciousness and corresponding physical signs. Stages 0–2 are precomatose, with the level of consciousness deteriorating progressively from stage 0 to stage 2. Stages 3–5 are characterized by coma, progressing from early (stage 3) to deep coma (stage 5).

TABLE 1. Predominant influenza strains, reported cases of Reye syndrome (RS) and varicella-associated RS, RS incidence, and RS fatality rate — United States, 1974 and 1977–1988*

Year[†]	Predominant influenza strains Jan–May	RS cases		Incidence of RS[§]	Case-fatality rate (%)
		Total	Varicella-associated		
1974	B	379	—	0.6	41
1977	B	454	73	0.7	42
1978	A(H3N2)	236	69	0.4	29
1979	A(H1N1)	389	113	0.6	32
1980	B	555	103	0.9	23
1981	A(H3N2)	297	77	0.5	30
1982	B	213	45	0.3	35
1983	A(H3N2)	198	28	0.3	31
1984	A(H1N1) + B	204	26	0.3	26
1985	A(H3N2)	93	15	0.2	31
1986	B	101	5	0.2	27
1987	A(H1N1)	36	7	0.1	29
1988	A(H3N2)	20	4	0.0	30

*Continuous RS surveillance began in December 1976. Data for 1988 are provisional.
[†]RS reporting year begins December 1 of previous year.
[§]Per 100,000 U.S. population <18 years of age (U.S. Bureau of the Census data).

Reye Syndrome — Continued

Editorial Note: The annual number of RS cases reported to CDC has decreased steadily since 1980. Major studies on RS and medications (*1–3*) have confirmed prior reports (*4–6*) of an association between ingestion of aspirin during antecedent viral illness and subsequent development of RS. The decline in the number of RS cases since late 1980 coincides with the increased publicity about this association and with the decrease in the frequency and/or dose of aspirin-containing medication used in treating children with influenza-like illness or varicella (*7,8*). In addition, since 1986, labels of all aspirin-containing medications have been required to provide a warning about the risk of RS in association with aspirin use in children with influenza-like illness and varicella.

Before diagnosing RS, physicians should rule out any of the approximately 20 metabolic disorders that may mimic RS, particularly in infants and small children (*2,9–11*). Because 40%–65% of reported RS patients since 1985 have been ≥10 years of age, health-care providers and public health agencies also should advise older children and their parents about warnings concerning aspirin use.

Interest in reporting RS may wane as the number of cases decreases in the United States. Health-care providers and public health agencies are urged to continue reporting to the National Reye Syndrome Surveillance System to assure adequate epidemiologic monitoring of this illness.

References

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