

Multidrug treatment for Hodgkin's

Cancer scientists may be a long way from understanding exactly why and how cells turn cancerous, but they are extending dramatically the lives of patients with several kinds of cancer—to the point that those cancers can be considered curable.

In 1956, children found to have leukemia could be expected to live only six months. Now, thanks to the use of a combination of cancer drugs and radiation treatment, childhood leukemia is 40 percent curable. A number of young leukemia patients who were given the combination treatment are now disease-free adults, married and with children of their own (SN: 3/3/79, p. 133). Similarly, in 1964, the median survival of patients with advanced Hodgkin's disease (cancer of lymph tissue) was only two years. Now, 16 years later, this kind of cancer can be cured, Vincent T. DeVita and his colleagues at the National Cancer Institute in Bethesda, Md., report in the May ANNALS OF INTERNAL MEDICINE.

In the early 1960s two new classes of cancer drugs became available, and in 1964 DeVita and his co-workers set up a pilot trial to see whether a combination of four drugs from the new classes—mechlorethamine, vincristine, procarbazine and prednisone (with the acronym MOPP)—might be safely and effectively

given to advanced Hodgkin's disease patients. Each of the drugs was known to have an independent antitumor activity and to have no cross-resistance. By 1967, DeVita and his team had learned that MOPP was safe and that it could bring about remissions in advanced Hodgkin's patients. Other patients with advanced Hodgkin's disease were put on the regimen, and by 1976 198 patients had been treated. It is this total of 198 patients, treated with MOPP between 1964 and 1976, that DeVita and his colleagues have followed scientifically to see exactly what MOPP can do in terms of cancer remissions and long-term survival.

Eighty percent (159) of the 198 patients, they have found, achieved complete remission after a median of three months of MOPP treatment. (Female patients had a somewhat greater complete remission rate than males.) Sixty-eight percent (107) of patients achieving a complete remission have remained disease-free beyond 10 years from the end of their treatment. Thus, 107 patients, or 54 percent of the total 198, have remained disease-free beyond 10 years from the end of treatment.

DeVita and his colleagues consider this 54 percent to be cured of their cancer since most Hodgkin relapses were found to occur within two years after discontinuation of treatment and only several up to seven and a half years after discontinuation. "Advanced Hodgkin's disease is curable by chemotherapy," they conclude. □

Fire spares warbler nest area

Despite a forest fire that raged through 25,000 acres in northern Michigan, destroying dozens of houses and killing a Forest Service technician, less than a dozen pairs of Kirtland's warblers will lack breeding territory, according to the U.S. Forest Service. The fire, which was supposed to burn only 200 acres, was set by the Forest Service as a "wildlife habitat improvement fire." But more than an hour after the burn began, winds fanned the flames out of control.

The fire was intended to provide the required habitat for the small blue and yellow Kirtland's warbler, which summers only in the Huron National Forest in northern Michigan. The bird nests on the ground and depends on thickets of jack pine boughs so it can enter and leave the nest unobserved. Jack pine provides the appropriate cover when the trees are 6 feet to 15 feet tall. When the trees grow taller, the lowest branches die and there is insufficient cover for warbler nests.

When forest fires are prevented, the jack pine trees grow tall and the Kirtland's warbler population falls. To fight the species' rapid extinction the Forest Service burns different patches of jack pine forest each year to ensure an adequate area of young



Kirtland's warbler or "bird of fire".

pinus, 8 to 22 years old, for future Kirtland's warbler nesting.

Jack pines have been found to thrive in frequently burned areas. When the pine cones, which remain closed and attached to a living tree for years, are seared by fire, they open, scattering several years' supply of seeds to germinate in the fire-cleared soil.

Of the 12,000 acres of habitat that the birds had been expected to occupy this summer in the Mack Lake area, 100 acres were burned by the uncontrolled spread of the forest fire. That area would have served only 6 to 12 pairs of warblers, a Forest Service spokesman said. He suggested that even those birds might be able to squeeze with the others into the available nesting areas when the birds, which numbered 422 at last count, return within the next month from their winter home in the Bahamas. □

Booze and pregnancy: The pickled brain

Pregnant women should avoid alcohol. The well-documented effects of excessive drinking on their offspring include growth deficiencies, specific facial deformities and central nervous system dysfunction, which may be related to abnormal brain development. And although alcohol can be harmful to the fetus at any time during pregnancy, experiments now are helping pinpoint the time at which the effects of alcohol on the developing brain may be the most damaging.

As the brain develops, it goes through a period of rapid growth during which it is extremely vulnerable to outside influences. In humans, this brain growth spurt begins at mid-gestation, peaks in the three months prior to birth and ends by the third year after birth. In rats, the growth spurt occurs during the first 15 days after birth. Researchers Jaime Diaz and Herman H. Samson of the University of Washington in Seattle gave rats intragastric feedings of alcohol and milk on days four through seven following birth, approximating the final trimester of a human pregnancy. The formula, which varied from one percent to five percent alcohol, induced high blood-alcohol levels, "but still within the range seen in human female chronic alcoholics," say the researchers in the May 16 SCIENCE. And, they explain, since alcohol passes easily through the placenta, it is likely that fetal blood-alcohol levels approximate those of the drinking mothers.

The alcohol-fed rats were measured in a variety of ways and compared with milk-fed litter mates. Body weights did not differ, but striking behavioral differences were noted, including impaired reflexes, hyperresponsivity, lack of coordination and constant body tremors. (Similar tremors during the first few days of life have been reported for infants born to alcoholic women.) When the brains of the rats were compared, those of the alcohol-fed animals weighed 19 percent less than those of the controls, with the cerebellum being particularly affected.

The researchers admit that direct comparisons between species are difficult to make but say their data do suggest that alcohol could have a toxic effect on the development of the human central nervous system relatively late in gestation, particularly during the final three months of pregnancy. □

Smaller brain came from alcohol-fed rat.

