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A. G. VORESS

A workshop on brain tumors in the chemical industry was held at The Barbizon Plaza Hotel in New York City on October 27-29, 1980. I have reviewed the more interesting items in the workshop in the attached document. If you would like further detail, I will be glad to discuss any of the items with you.

H. E. Fritz
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WORKSHOP ON BRAIN TUMORS IN THE CHEMICAL INDUSTRY

The titled workshop was held in New York City on October 27-29, 1980. Listed below are the more interesting items of the workshop.

1. The attendance varied from 100 to 200 at each session depending on the subjects and time.
2. The attendees were a mix of governmental workers (OSHA, NIOSH, EPA), union, academic, consultant and company representatives.
3. It was stated that NIOSH and OSHA asked Dr. Selikoff to set up the meeting and that they paid for part of the expenses.
4. The Chairman, Dr. Irving Selikoff, gave a historical overview of brain cancer cases. He covered mostly dye workers and smelters and briefly mentioned the current popular subjects of vinyl chloride, asbestos and etc.
5. Most speakers were objective. Some of the government and union attendees gave views that seemed non-objective. Very little of the industrial viewpoint was brought out not even by the industrial representatives. Union representatives said their members are exposed to greater risk so the companies should be compelled to keep records on all employees until death.
6. The most talked about paper, at least from Union Carbide's viewpoint, was Dr. Victor Alexander's paper on the epidemiology study being done at UCC's Texas City Plant. He discussed the items submitted previously to UCC in a draft of the paper. A total of 18 primary brain tumors, nearly all glioblastoma multiforme, among the employees at UCC's Texas City plant over the last 40 years. The average age was 53 at the time of death, median employment was 21 years, and interval between first employment to death averaged 24 years. He said the two-fold excess of brain tumors found are likely to be occupationally related, but there is no good evidence to link the deaths to one or more carcinogenic agents.
7. The press coverage was significant as evidenced by the two TV camera crews and several articles in newspapers and radio. One TV crew was from CNN (Cable News Network) and the other from Channel 2 (I think from Houston). For two days I sat just behind the CNN crew. The director had copies of many of the papers given by OSHA and NIOSH and at the critical times when the speaker would make a "sensational" type of statement, the lights would come on and the cameras were rolling. The same was true during the discussion sessions. The cameras concentrated on the government and union representatives and on the industrial people who might be in a tight spot. Dow was one.
8. Dr. Leonard Kurland of Mayo Clinic found an increased incidence in older residents of Rochester, Minn. He pointed out that better diagnosis using the new modern detection devices may be the cause of some of the increased deaths being reported.

9. Professors, students and exempt personnel frequently had slightly higher brain cancer rates. It is not known if these statistics are significant.
10. Summit county in Ohio has the highest rate in Ohio. Since there are many rubber companies in the area, it was suggested that carbon disulfide maybe a cause.
11. James Swenberg of CIIT reviewed the approaches to investigations where known carcinogens are used. He did mention an acrylonitrile study at Duke where the only tumor observed was in a control animal.
12. Some of the studies using union data have some built-in biases. Few employees are traceable through most union files after they quit working because the union does not follow the employees. Therefore, those that die young or get benefits from the union, such as a pension, are recorded. An epidemiologist mentioned that this practice gives incidences too high because there is a large group of workers, believed to be healthy because they did not pay union fees for benefits, which are not included in the comparison studies.
13. Dr. Ralph Cook of Dow indicated there was no apparent risk working at the plant. Since most of the cases were from employees hired before 1950 there was a higher incidence during this period. Dow suggested that this might be due to taking older (about 10 years) and less healthy people during the war years. Dow observed a greater risk (2.2X) for salaried employees but no significant affect for smoking and alcoholism.
14. The impurity SB-40 in Salk polio vaccine was mentioned as a cancer producing agent.
15. Dr. Bruce Karth of DuPont reported cancer rates the same as U.S. population in all employees at DuPont from 1956 to 1979. Again, salaried employees were slightly (not statistically significant) higher than hourly employees.
16. Terry Thomas of NCI in work done for OSHA reported an increase in brain cancers in three oil refineries using OCAW statistics. The expected number of cases was 14 and 25 were observed. CNN TV director had a copy of the paper and the cameras rolled when the more dramatic portions were delivered.
17. Dr. Chi-Pang Ween of Gulf Oil gave a good report showing no significant increase in brain tumors in the "largest oil refinery study yet reported". These results were opposite other results, I presume it was the Terry Thomas paper.
18. M. R. Alderson of the Institute of Cancer Research in England showed a lower rate of brain cancers in eight petroleum refineries in England. He pointed out an increase at one refinery may not be statistically significant, such as the case in the Texas studies. The problem is how to interpret the data.

19. Michael Symons reported no increase in brain tumors in four rubber companies although another study showed an increase in that geographical area of Ohio.
20. Asbestos insulators had no significant increase in brain cancers but a high frequency of lung cancer according to Dr. Herbert Seidman.
21. In a union sponsored study, W. J. Nicholson of Mt. Sinai Hospital reported "truly an excess" of brain cancer in chemical production workers. The numbers were very small as only union data was used. At UCC (Texas City) they found four cases and expected only 0.4. At Dow, two cases of brain tumors were observed where only 1.1 was expected.
22. A review of the cancer registry in Sweden by Anders Englund showed no increase for most chemical workers. Welders, medical personnel and rubber workers had a very slight increase (1.23 versus 1.0) in cancers. Again better diagnosis was mentioned.
23. Another report from Sweden by Robert Olin followed all graduates from one school from 1930 to 1959. Chemists had an increase in brain tumors and it was found that methylnitrosourea (MNU), a known carcinogen, was used routinely in all organic chemistry laboratories during this period.
24. Susan Preston-Martin of Los Angeles County reported that the higher social classes have higher central nervous system cancer rates, especially high in Jewish people. However, the Jewish people had the same rate as the Jewish people in Israel.
25. The experimental studies were reported in the last day of the workshop and most studies used known carcinogens and got rather dramatic affects. Only a few of the items will be mentioned from these papers. Tumors survive when transferred to other test animals. One tumor has been kept alive for 36 years. Tumors will grow anywhere in the body when transferred, they do not have to be placed in the same location. Most carcinogens must be applied in high dosages to produce tumors. Young animals are affected more than mature ones.
26. In the final review session it was pointed out that there is not a balanced treatment from the press and the polarization of the different groups at the conference was a disturbing factor. Most people wanted another workshop to learn the results of the completed studies. PMR's are misleading numbers but are a necessary first step study. Union representatives wanted new regulations based on the data presented. One speaker (Enterline) commented that chemical workers do have a low death rate so chemicals may be beneficial to man. Oils from spices are some of the most potent carcinogenic agents known.

In summary, the government agencies and unions are out to make the most of this new frontier. The number of studies and investigators will probably increase rapidly in the next few years and industry will be picked on even more.