

MASTER

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URANIUM MINER LUNG CANCER STUDY

PROGRESS REPORT

For Period July 1, 1977 - July 1, 1978

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URANIUM MINER LUNG CANCER STUDYPROGRESS REPORTAbstract

This study was initiated in 1957 by the U.S. Public Health, and many facets of this project are reaching final objectives. Many new studies have developed in the course of this study and will continue. The projects supported by The Department of Energy during the past year are of utmost importance and consist of::

(a) Collection of material from uranium miners known to have cancer of the lung into a tumor registry; (b) Completion and publication of the Manual on Pulmonary Cytology; (c) Regression study of sputum cytological findings in uranium miners who showed marked atypical squamous cell metaplasia and have quit smoking cigarettes, mining, or both; (d) Continuation of sputum collection and collection of lungs from deceased miners; (e) Sensory development for localization of carcinoma in situ of the lung, and (f) Lung histology program. Since we have examined approximately 80,000 sputum samples over the last 21 years in cases that showed normal cytology at the inception of the study and some subsequently developed carcinoma of the lung, we have an accumulation of material that is worthy of study and presentation. In addition, we continue to add new knowledge to the art of diagnostic pulmonary cytology. This is a relatively new field, and our contributions resulting from these studies have added much to this new diagnostic tool.

PROGRESS REPORT

URANIUM MINER LUNG CANCER STUDY

The progress made in the last ten and one-half years is substantial. A summary of the accomplishments on each project is as follows:

I. Main Research Accomplishments:

A. Tumor Registry

Two hundred ninety-seven cases have been accumulated and include the following items:

1. All of the smears made from sputum on each case are properly recorded and filed. Over 200 sputum slides are part of the registry for some cases.
2. Slides from all tissue sections, including biopsies, and the autopsy material, including the serial sections of lungs which are prepared by Dr. Oscar Auerbach, are filed with each case. A recent publication on these findings is attached.
3. Complete hospital charts, exclusive of the nurse's notes, are available with each case.
4. Autopsy reports, including the gross and microscopic, are a part of each case.
5. The tracheobronchial tree has been studied and recorded in many of the uranium miners who are in this registry.

B. The Manual On Pulmonary Pathology

The manual was published in June, 1978, by the Educational Products Division of American Society of Clinical Pathologists, and this is considered a worthwhile contribution. Copies have been distributed as requested by Dr. Walter Weyzen, Program Manager, Department of Energy.

C. The Regression Study (See Charts I and II)

Data is accumulated continuously for this study, and it is hoped that it should be completed by 1980. This study has become more and more important as more sputum studies are being done on private patients and on groups of government research projects. It is estimated that, when completed, it will embrace knowledge on about 1,500 to 2,000 miners who have been followed for varied periods of time. Many of the cases have been lost to the study because of death, migration, cessation of work or other changes in the habitat of the miners.

This study has been reviewed by Dr. W. J. Dixon, University of California, for further epidemiological and statistical analysis.

D. Sputum Collection and Lung Collection

During the period July 1, 1977 to July 1, 1978, 2,090 sputum specimens have been collected and are being processed on uranium miners and mill workers. During this same period, ten lungs were collected and processed. Fifteen cases of malignancy and several suspicious cases have been diagnosed from sputum smears. This data is being evaluated as to findings of atypia in each category compared to house cases to determine if there are any significant differences in the findings of the uranium miners.

The comparative studies of the lung findings on all the autopsied cases and non-smoker and smoker population are being done. These slides have been randomized and read by Dr. Oscar Auerbach.

E. Sensory Development for Localization of Carcinoma in Situ

This work is being done in cooperation with Dr. Gerald C. Huth in Los Angeles, California, Dr. Edward A. Profio in Santa Barbara, California, and Dr. Warren King at Edmonton Alberta Hospital in Edmonton, Canada. One patient was sent to Roswell Park Memorial Hospital for testing during the past year. We are still interested in this procedure and, hopefully, it will eventually be effective in localizing carcinoma in situ lesions.

F. Lung Histology Study

This project has been completed and the findings are included in the enclosed manuscript which has been submitted and accepted for publication in CANCER.

II. Students Trained

Fifty-nine students have been trained in our AMA Approved School of Cytotechnology, and eight students are currently enrolled.

III. Summary

These studies are being integrated and yielded new data and knowledge in the field of lung cancer that will ultimately relate to better patient care and treatment of this disease in man, which presently is the number one killer after heart disease.

CHART I

REGRESSION STUDY

The Uranium Miner List for the Regression Study (miners with marked atypia or higher sputum) was received from Dr. Victor Archer on January 14, 1969. The 415 miners on the original list were all reviewed, and some were reclassified.

1. Original population for study (Doctor Archer's list)	415
a. Total number of miners reviewed that met the criteria of study	246
b. Total number of miners discarded because they didn't meet the criteria of the study	169
c. Total number of miners fulfilling the criteria of the original population and added to the above miners (a) during 1969	<u>139</u>
d. This group was then considered to be the Regression Study group as of Dec. 31, 1969	385
e. Total number of miners currently followed	165
f. Total number of miners now inactive (no response, no address, inadequate information, etc., but worked up as much as possible and filed)	156
g. Total number of miners expired since the beginning of the study	<u>64</u>
Total	385

CHART II

ADDITIONS 1970 TO PRESENT TIME

(Not Regression Study, but showing marked atypia and being followed on a three-month repeat basis.)

Total number of miners added 1970 to present, active	154
Total number of miners added 1970 to present, inactive (No response, no address, inadequate information, etc., but worked up as much as possible and filed.)	70
Total number of miners who have expired from this group	70

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