

November the 29th, 2021 Eternit Hearing

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Casale Monferrato with Eternit, Broni with Fibronit, Genoa, La Spezia and Monfalcone with the shipyards: these are Italy's *red zones*, defined as such because of the incidence of malignant mesothelioma cases. In Casale people started worrying when all those death notices were being pinned outside the Eternit plant: it was the early 1980s that was the first clue that something was not as it should have been.

In his 1983 post graduate thesis, Dr. Massimo Capra Marzani pointed out an anomalous situation that deserved further investigation: in the ten years between 1973 and 1982, 61 cases of pleural malignant mesothelioma had been diagnosed at Casale's Santo Spirito Hospital (where Dr. Capra Marzani worked in Medicine) 55 of which (31 men and 24 women) lived in Casale and 6 in neighbouring towns. Moreover, he noted that 37 (61%) had not been exposed to asbestos at work (i.e., they had not been employed by Eternit) and, in addition, 55 (20 men and 35 women) pleural neoplasia cases had already been diagnosed in the previous decade and at the same hospital. His conclusions were a wake-up call: the incidence rate of 13.75 cases per 100,000 people per year was much higher than the average figure in Italy in Casale and its surroundings.

COHORT STUDIES

It was the starting point for epidemiological studies: the 1984-1986 cohort of Eternit workers, updated in 1996, 2003, 2008 and 2013; the cohort of the wives of Eternit workers in Casale, in 1991, updated in 2008 and 2013. It was the first study in the world to provide evidence and measure impact on wives. Previously there had only been a mention in a US article. The spread of malignant mesothelioma was observed in the Casale Asl area from 1995; and an Italian multicenter study on cohorts of asbestos exposed in 2013.

What does performing a cohort study mean? It means comparing the frequency of the disease found (in this case mesothelioma) in the group of exposed subjects (in this case exposed to asbestos fibres) and the general population or to an unexposed group.

"Our goal - explained Professor Corrado Magnani, one of the Prosecution's expert witnesses at the Eternit Bis trial, currently held at the Court of Assizes in Novara - was to verify and quantify scientific evidence, and we did so long before the trials. That is, we wanted to understand and offer scientific evidence to the local community and to the international context, because we sensed that the situation was very difficult and would have a major impact. Furthermore, our studies contributed to the banning of asbestos in Italy in 1992 and contributed to the worldwide understanding of what environmental exposure to asbestos caused".

EPIDEMIOLOGICAL EXPERT WITNESSES

The first studies were carried out by Professors Benedetto Terracini and Enrico Anglesio.

Over time, research has been published in scientific journals and presented in prestigious international meetings: this demonstrates the results' unquestionable and recognized validity.



Prof Corrado Magnani and Dr Dario Mirabelli

Corrado Magnani and Dario Mirabelli are as expert witnesses, appointed by Public Prosecutors Gianfranco Colace and Mariagiovanna Compare to explain the causes and growth of malignant mesotheliomas and to evaluate the causal link between exposure to asbestos and the onset of the disease and the fatal outcome (death). Both expert witnesses have carried out several dozens of studies; Magnani was a professor at the University of Eastern Piedmont; Mirabelli was in charge of Piedmont's Mesothelioma Registry.

MESOTHELIOMA REGISTRY

Each region has its own Registry; the regional ones contribute to the National Mesothelioma Registry (abbreviated as ReNaM).

" ReNaM - Mirabelli explained - records about 1600 cases of mesothelioma per year in Italy. Considering that so-called "background incidence" (i.e. the risk of contracting this disease in the absence of exposure) is equal to one case per million people per year, taking into account that the Italian population is 60 million people we should have 60 cases and not 1600 that we have in our country!" As mentioned, the highest concentration was found in certain areas where the use of asbestos was more widespread (especially factories and shipyards).

At the November the 29th Eternit bis hearing (part of the trial against Stephan Schmidheiny, the Swiss businessman accused of having caused the death of 392 people in Casale) , Prof Magnani and Dr Mirabelli presented the results of the research carried out.

THE SITUATION IN CASALE

The context: Eternit's production took place in Casale between 1907 and 1986: flat and corrugated sheets, pipes and high-pressure ducts, and flues were manufactured. In 1975, this meant 595 tons of products a day, with the daily use of 75 tons of asbestos powder and 17 tons of "dry waste" (i.e., from processing waste, shredded and ground to be put back into the production cycle). By 1979, production had risen to 640 tons per day of manufactured goods (with a 20% increase in pipes), requiring the daily use of 83 tons of asbestos. The company thrived: it employed 3434 workers from

1950 onwards; in 1960 there were 1650, in 1970 there were 1200 and in 1980 numbers had shrunk to 800. Processing was discontinued in 1986, when the Italian company went into bankruptcy, but the release of fibres continued until the area was cleared in 2006 (reclamation carried out with public money).

As has been pointed out, the Eternit manufacturing plant was not only source in Via Oggero (Ronzone District) and the area almost in front of the Ex Piemontese (where the crushing of waste took place in the open air), but also included the railway station next to the station, the warehouses in Piazza d'Armi with the adjacent pipe park, the landfill in the Oltrepo area, with the addition of the train and truck transport of both the raw material and the products for sale. This is to say that "the entire built-up area of Casale was practically surrounded by the various Eternit sites".

THE RISK OF DEVELOPING MESOTHELIOMA

Studies began to show that for those who had worked at Eternit, the risk of developing the disease increased 50 fold above the average. But even those who had not worked were still developing the disease, with exposure being inversely proportional to the distance between the dwelling home to the plant: for those who lived less than 500 meters from the factory, the risk increased 27.7 times; for those who lived two and a half kilometres away, the risk was 11 times higher; the risk increased by 8.3 times for residents in the surrounding towns.

Dr. Massimo Capra Marzani was right to highlight the alarming situation that he had "seen" in the case history of mesotheliomas at the Santo Spirito Hospital, Professor Magnani expressed his gratitude to the doctor from Casale.

THE 392 CASES

" Based on data from the Mesothelioma Registry, the 392 cases of malignant mesothelioma examined for the Eternit Bis trial - the expert witnesses explained – are a share of the 1254 cases in the population of Casale and neighbouring municipalities from 1990 to 2018." In detail: of the 1254 cases 729 were men, 525 were women. The figure looks even more significant when compared with the situation in the rest of Piedmont (despite it being a region with a high number of mesotheliomas) where the cases are a total of 4315 (2860 men and 1455 women). This means that a little more than one third are concentrated in the Casale area¹. A very detailed file was created for each of the 392 victims, and handed over to the prosecutor's office, and each speaks to their lives: a picture of their working life, their homes, assessing other possible exposures (for example, the driveway paved with fragments of asbestos waste or the attic insulated using asbestos powder) and then an overall assessment that analyzes the different moments of exposure to airborne fibres.

THEY ARE ALL MESOTHELIOMAS

The starting point is that all 392 victims listed in the indictment were diagnosed mesothelioma. And that asbestos causes malignant mesothelioma has been known with certainty since the early 1960s: a study (by Wagner and others) analyzed the cases of asbestos workers and miners, their families and people who lived in contaminated areas. The results were shared with the international scientific community in 1964, at the New York Academy of Sciences conference. At this conference, almost

¹ Population of Piedmont 4,356,000/ population of Casale 34,246

sixty years ago, Professors Enrico Vigliani and Giacomo Mottura reported cases associated with occupational exposure to asbestos in Lombardy and Piedmont. Further confirmation came later: "In Italy, between 1970 and 2010, dozens of studies were conducted, 43 of which have recently contributed to the combined study of more than 50 thousand asbestos workers". In 2021 the EChA (European Chemicals Agency) confirmed the relationship between exposure to asbestos and frequency of the disease.

THE ONSET OF MESOTHELIOMA

Carcinogenesis is the process that generates the tumour, or rather the parent cell of the tumour, through alterations that transform it from a normal cell into a malignant one. Cell transformation does not necessarily occur immediately after the onset of exposure to asbestos. The next phase, until the invisible establishment of the tumour, is known as "**induction**." Once induced, the cancer, not yet visible, is able to grow independently: this is the "**preclinical**" phase. When the tumour mass grows to a certain size, symptoms appear, and that leads to diagnose the disease. The "**biological or real latency**" coincides with the "preclinical phase", when the tumour is there, but not yet seen: scientists agree to estimate a duration around 10 years. The term "**latency**" - and this can cause confusion - **is also used to indicate a different thing: the time between the beginning of exposure and diagnosis**; so defined, the latency of mesothelioma is much longer than the preclinical phase and can last even forty or more years.

EVERYTHING STARTS FROM EXPOSURE

Exposure that generates the disease. In the absence of exposure, the risk of getting mesothelioma is extremely rare. In addition, exposures cause the anticipation of the disease: in some studies this anticipation has been measured and corresponds to several years. "It is true that we all die - commented Professor Magnani - but dying sooner is not the same as dying later ". Exposure to what? To asbestos fibres (very fine and invisible to the naked eye), airborne in the air we breathe. It is not enough, however, to know the concentration of fibres you are exposed to, because the duration of exposure counts: the relationship between duration of exposure and risk of mesothelioma is well demonstrated by several studies.

The longer you are exposed for, the greater the risk of developing the disease. This means you have to factor time in. In addition, the type of fibre should also be considered: carcinogenicity to the pleura has been demonstrated for all types of fibre, but the risk is highest for crocidolite (or blue asbestos) and lower (but greater than zero) for chrysotile (or white asbestos).

CUMULATIVE EXPOSURE

In the course of their lives, a person may live in different places and may perform different work tasks or jobs: "The risk of mesothelioma - insisted the PPs experts- is greater the higher the cumulative exposure, which takes into account the extent of exposure, the time it lasted for, the changes in the jobs and activities carried out by the person, and any moves (changes of residence).

"Those who lived through the era of asbestos - summarized Dr Mirabelli - had multiple circumstances of exposure that, however, are not in competition with each other, rather they cooperated to determine the mesothelioma." The epidemiologist listed a number of companies in

the Casale area, both public and private, that used asbestos not as a raw material (therefore in concentrations far removed from those of Eternit), but in certain specific phases of activity (insulation, friction materials, braiding, textiles, flooring, cleaning...). In analyzing the 392 cases in the trial, these exposures that may have had an impact were also recalled for completeness and correctness, and should be added when considering environmental exposures. As for environmental exposures, it is useful to remember (the example that follows is just to illustrate, but kept in mind by the consultants on a case-by-case basis): if a person spends 8 hours a day in a workplace, 5 days a week, 42 weeks a year, and also lives in Casale 24 hours a day, 7 days a week, for 52 weeks, the exposure time in the workplace is equal to a quarter of the total, while the exposure time outside the workplace and in the living context is (about) 3 times higher. Thus, the burden of environmental exposure is greater than one would think if one considered only the concentration of asbestos fibres in city air is lower than that in the work environment.

NEXT HEARING



Signs, flags, newspaper cuttings and research carried out by students from Casale at the picket, in Novara, outside the courtroom where the Eternit Bis trial is being held in the Court of Assizes.

The December calendar has been reorganized as follows. On Monday 6, three expert witnesses of the plaintiffs will be heard: the pathologist Dr Mauro Papotti, the occupational physician Dr Pietro Gino Barbieri and the epidemiologist Edoardo Bai. On Monday 13, the cross-examination of the prosecutor's experts is scheduled: Dr Massimiliano Buggiani and Dr Pavilio Piccioni, pulmonologists, Dr Ferruccio Perrelli, occupational physician, Prof Corrado Magnani and Dr Dario Mirabelli, epidemiologists. On Monday 20, examination and cross-examination of Prof Irma Dianzani, geneticist (PP's expert witness: she should have been heard on Monday 29, but due to lack of time her testimony was postponed).

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