

15 years in friendly fashion. He states his position; I state mine; and we agree to disagree.

You have also heard that there were two reports in the Hellman committee report. I would like simply to put a little perspective onto some of the statements which raise concern about the possibility of carcinogenesis.

In the first place, it is stated that there are five species of animals which develop cancers when given estrogens. It is not usually stated that other species, for example the guinea pig, do not.

It is not stated that certain inbred strains are also totally resistant, and that the positive experiments require a highly artificial animal exposed to fantastic doses of hormones for very long periods of time.

What this has to do with the hormonal exposure to which humans are exposed is a very dubious matter. At a meeting about 2 years ago, Dr. Gerald Mueller, professor of oncology at the University of Wisconsin, and one of the world's outstanding authorities on the relations of estrogens to cancer, was on a panel with me, and I purposely asked him this question, and I quote from his answer:

Most of the tumors that have arisen in animals under these circumstances are dependent on the administered hormones to start with, and as soon as you take away the hormonal support, the tumors essentially evaporate from the scene. It is only after a long, progressive pushing of these tumors that some of them change to become hormonally independent. The data really argue for the fact that estrogens of their own accord are not primary carcinogens . . . To produce tumors in experimental animals, you usually end up using fantastic levels of hormones. I think the gross dosage used for experimental tumor production is completely different from what's used in contraceptive control.

It is also seldom mentioned in these expressions of concern that cancers have never been produced in the primate. I think this is terribly important, because thalidomide has shown us quite clearly that you can look in all sorts of animals and find nothing; and when you examine thalidomide in the primate, you get some answers. So I think it is terribly important, no matter how small the number of primates is, that cancer has never been produced by estrogen.

Furthermore, there are very interesting experiments, including one by Dr. Charles Huggins, a Nobel Prize winner, which showed that if you induce chemical cancers in mice, these chemically induced cancers can be suppressed or prevented by these female hormones which are supposed to be carcinogens.

On this basis, I thoroughly agree with Dr. Hertz, that we do not know the answer. The only place where we disagree is that he does not know and is unwilling to give any estimate of the probability of risk; and my feeling is, that since he has been saying the same thing for 15 or 20 years and has not come up with any new data, there is reason for some reassurance, even in view of the long incubation period of cancer, that nothing is going to turn up.

This table, which comes from an article in 1963, shows the number of cancers to be expected in a population of this size over this length of time, of women being treated with estrogens for menopause. The number of actual, observed cancers is recorded; this number of cancers, if anything, is less than would be expected if these women had taken no hormones at all, and had simply been observed over this period of time. Now, I am specifically not saying that this difference is a signifi-