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CARCINOGENICITY TESTING— A NATIONAL CATASTROPHE

"What you have described to us is a national catastrophe!"

That strong language was used by a prominent clinical researcher who had just heard a presentation by a National Cancer Institute (NCI) staff scientist at a meeting of the National Council on Drugs (NCD). In an audio-visual presentation, the NCI scientist had provided a rather complete description of the NCI's Carcinogenicity Testing Program, and the apparent unanimous reaction of the NCD members present closely corresponded to that articulated by the clinical scientist quoted above.

In late spring 1979, the NCI released to the public press the test results on several well-known and long-used drugs which had been studied under that Institute's Carcinogenicity Testing Program. Included among those drugs was reserpine, and it was assigned a positive classification as a carcinogenic substance. Because of the current wide use of reserpine in medical treatment, classification of this drug as a carcinogenic agent caused considerable anxiety, apprehension, concern, and confusion among health care practitioners, as well as the general public including many patients under treatment with the drug.

Subsequent reports regarding the potential risks involving reserpine seemed only to confuse the matter further rather than to clarify it. Hence, the NCD invited the NCI to provide the group with a first-hand, detailed explanation of the entire testing program.

Beyond hearing that the project costs approximately 65 million dollars a year to conduct the screening program to detect possible carcinogenic effects of chemicals (including drugs), the NCD was also informed regarding the test protocol in use. The latter essentially involves the administration of maximally tolerated doses of the test chemical to two species of rodents for one generation.

Beyond the general view that such testing is virtually meaningless by itself, the NCD was shocked to learn, among other things, that the NCI has not:

- (a) done any studies to correlate their animal results to humans;
- (b) tested any known human carcinogens in animals to ascertain whether common relationships exist;
- (c) attempted to establish whether there is any dose relationship for known carcinogens, much less what such a relationship might be;
- (d) ascertained "background effects" for the test animals in their test environment—that is, the frequency of tumors in control animals due to heredity, feed, drinking water, or other factors; and
- (e) conducted any replicate experiments whatsoever to confirm their initial findings—hence, even such questionable "positives" as reserpine have never been repeated.

During the ensuing discussion, the NCI official was subjected to sharp questioning regarding the basic scientific faults and omissions in the program. And incredibly, he clarified that he and his associates equally recognized those deficiencies, but they were constrained by legislative factors to follow their present course.

Incidentally, more than half of the substances tested in the NCI's bioassay program provided some evidence of carcinogenicity. Projections are that this is probably an accurate forecast of the eventual outcome of the total program. Imagine the devastating consequences on life as we know it if half the chemicals to which we are presently exposed are summarily banned from further use. The very thought is mind-boggling!

Yet such disproportionate findings of carcinogenicity potential should not be too surprising considering the massive doses used, the lifetime of exposure, and the other radical conditions comprising the "test protocol" employed.

But as explained by the NCI official, the agency is primarily restricted by the unrealistic provisions in the legislation Congress enacted. Given such a mandate, the Institute has little choice. Moreover, the enormous cost to conduct such tests on even a single chemical means that only a relatively few substances can be tested, thereby making simple retesting an "unaffordable luxury."

Clearly, Congressional review, restudy, reconsideration, and amendment of this law are in order to rectify what, in this writer's view, was accurately labeled "a national catastrophe."