Chapter 13

Summary, Applications of these Data, and Perspectives for the Future

Summary. Results for non-simultaneously diagnosed malignant tumors from Connecticut indicate that individuals with one malignant neoplasm have 1.29 times the risk of developing a new independent primary tumor when compared to individuals who never had cancer (P < 0.01). However, the increased risk of multiple primary tumors is highly selective on a site-specific basis. Table 135 presents Connecticut Registry data indicating the risk of a subsequent primary malignancy by anatomic site of the later primary in patients with a first primary cancer. Tables 136 and 137 present tabulations for anatomic sites with statistically significant excesses and deficiencies, with an analysis by time interval between the two malignancies. Finally, Table 138 presents figures showing histologic confirmation for site-group pairs with significant excesses of observed-over-expected later primary malignant neoplasms.

The reader should bear in mind that just as the risk of subsequent primaries varies with the anatomic site of the subsequent primary (Table 135), the risk is also highly dependent upon the anatomic site of the first primary cancer (Chapters 6-12).

Application of These Data. Studies of multiple primary malignancies derived from the experience of a population-based tumor registry are of immediate value in cancer control programs. Findings of such studies highlight particular organs or tissues most likely to develop a second primary cancer, and are useful to the clinician concerned with detecting the second malignancy at the earliest possible stage.

The tabulations in this monograph better define the risk in the cancer patient of subsequent primary malignancies in terms of sex, tumor site, and time interval between the tumors. These data also help clarify the carcinogenic potential of various treatment modalities currently employed in the care of the cancer patient. When applied to questions of etiology, such studies provide corroboration for other epidemiologic investigations into the pathogenesis and causes of cancer. The results serve to complement the findings of genetic studies. Discovering hitherto unsuspected relationships between tumors may permit one to apply what is currently known about one tumor to understand the etiology of an associated neoplasm. Finally, reports of multiple primary cancers should assist in the identification of particular segments of the population for further study to elucidate the factors and mechanisms involved in oncogenesis.

Perspectives for the Future. The findings of this study of multiple primary neoplasms do not provide definitive answers, but rather are useful in formulating and testing hypotheses. One must be cautious to distinguish: 1) real from arctifactual relationships and 2) biologic from statistical significance. Other studies are needed to corroborate and evaluate the findings concerning multiple primaries. Detailed reviews of case histories and pathologic specimens should be undertaken to test the
relationships suggested. As we are able to follow larger population groups of cancer patients over longer periods, it will be possible to define the risk of subsequent primary cancer with more precision, not only in terms of sex, tumor site, and time interval between tumors as demonstrated in this monograph, but also in terms of the histologic type of the associated neoplasms. Such an analysis requires nearly complete microscopic confirmation of both the first and subsequent primary tumor.

It will also be useful to abstract and collect more detailed information on therapeutic regimens to evaluate better the carcinogenic potential of these various treatment modalities.

Finally, one should carefully examine results for patients at low risk for multiple primary cancer. Provided the deficits in observed-over-expected subsequent primary malignancies discovered in the Connecticut data are confirmed by other investigations, this information may be fruitful in detecting the mechanism involved in the reduction of risk. Such findings would be most applicable to efforts aimed at the primary prevention of malignant neoplasms.