Changing Paradigms in the Treatment of Endocrine Tumors

Endocrine tumors are increasing in incidence, and therefore a compensatory increase has occurred in the investigation and treatment of these tumors. The old paradigms are being challenged as our knowledge from outcomes-based data has increased. These data have shown that “one size fits all” is no longer justified, and paradigms are adapting to this change. As an example, the routine use of ablative, high-dose radioactive iodine 131 (I\(^{131}\)) for all patients with well-differentiated thyroid cancer has been modified. According to the 2009 American Thyroid Association Guidelines, I\(^{131}\) ablation may not be required for most patients with stage I disease and no significant risk factors.

The main emphasis of this issue that focuses on endocrine tumors is to provide physicians with the current information on these changes and controversies. We understand that not all the shifts in treatments and paradigms discussed in these articles have universal acceptance, but we believe that these practices will become the standard of care as more outcomes data are obtained in the treatment of endocrine tumors.

One of the primary current controversies is the need for prophylactic central compartment lymph node dissection at the initial surgery for well-differentiated thyroid cancer. It has been the routine practice for surgeons to remove only those nodes that look suspicious. In their article, Drs Hughes and Doherty point out that prophylactic central node dissection plays an appropriate role in the initial treatment plan and in recurrent disease.

Radioactive iodine has been the primary targeted therapy in thyroid cancer. However, potential long-term complications, including an increased risk of secondary cancers believed to be induced by I\(^{131}\), have led us to reassess the need for ablative radiation and the total cumulative dose risk. External beam radiotherapy has been used in certain unresponsive and aggressive thyroid cancers, but many patients may be treated too early in the treatment paradigms, with subsequent long-term sequelae. Dr Tuttle and colleagues present a risk-adapted approach for both of these treatment modalities.

Most well-differentiated thyroid cancers have good outcomes. In the past, when progressive disease occurs, the clinician had no effective treatment to offer. However, as we expand our understanding of the molecular pathways of tumor cell proliferation and angiogenesis, we can begin to target these pathways with appropriate therapies. An article by our group highlights current targeted therapies in well-differentiated thyroid cancer. Although initial enthusiasm for these drugs as a pathway to “cure” was unsubstantiated, significant short-term stabilization of disease progression has been realized. Clinicians should consider enrolling patients in a clinical trial when significant, non-iodine avid, unresectable, progressive disease is identified. Future investigation will likely involve multiple targeted pathways and combination therapy.

Pheochromocytomas and paragangliomas are usually benign but can be malignant in 10% of patients. Treatment options have traditionally been limited. Dr Grogan and colleagues review the currently available treatment options including targeted I\(^{131}\)-MBG, external beam radiation, radiofrequency ablation, and clinical trials with molecularly targeted medications.

The adrenal gland is a common site for tumor development. Benign tumors occur in greater than 5% of the population and are incidentally found on cross-sectional imaging. In the cancer patient, the incidentally found adrenal mass must be adequately investigated since the risk of metastasis is high. In isolated metastatic lesions, new data suggest that with resection of the tumor, if practical, the patient will have a better outcome. Dr McLean and colleagues review this information and present an algorithm for proper diagnosis and treatment planning for the isolated adrenal lesion.

Finally, as the incidence of neuroendocrine tumors has significantly increased, the treatment options have expanded. Dr Strosberg and colleagues explore these various options and future directions of treatment, including new combination therapy and improved outcomes.

Although we are still in the infancy of unraveling the best treatment paradigms for endocrine cancers, much has been accomplished in the recent past. Despite decades of traditional care for patients with endocrine tumors, paradigms are now evolving with treatments based on risk stratification and the availability of new modalities and agents.
We are finally seeing some good progress in our treatment of endocrine tumors. Advances in surgery, chemotherapy, radiation therapy, immunotherapy, and targeted therapy are providing a brighter horizon for patients with these tumors. We hope this issue of Cancer Control will be a helpful guide in formulating current evidence-based treatment plans for clinicians and patients.

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