Imaging techniques may help predict response to head and neck cancer treatment

November 16 2009

A combination of imaging tests conducted six to eight weeks after patients complete chemoradiotherapy for head and neck cancer may help identify patients who will respond to treatment and those who will require surgical follow-up, according to a report in the November issue of *Archives of Otolaryngology-Head & Neck Surgery.*

During the past two decades, chemoradiotherapy—combining chemotherapy and radiation treatments—has become important in helping preserve organs while treating advanced head and neck cancers, according to background information in the article. "These non-surgical approaches produce an excellent response at the primary tumor site and cervical lymph nodes resulting in high rates of locoregional disease control," the authors write. "Accurate and timely assessment of disease response at the primary tumor site and cervical lymph nodes after chemoradiotherapy is essential to detect residual disease, to direct surgical salvage and to prevent tumor recurrence."

James P. Malone, M.D., of the Southern Illinois School of Medicine, Springfield, and colleagues analyzed 31 patients with advanced-stage head and neck cancer who were treated with chemoradiotherapy between 2004 and 2006. All patients underwent combined positron emission tomography and computed tomography (PET-CT) to detect evidence of persistent tumors six to eight weeks after the completion of treatment and then were tracked for a median (midpoint) of 24 months.

Assessing the response of the tumor to treatment with PET-CT had a

sensitivity (rate of true positives) of 83 percent, specificity (rate of true negatives) of 54 percent, positive predictive value (probability that patients who test positive have the disease) of 31 percent and negative predictive value (probability that patients who test negative do not have the disease) of 92 percent.

In the 21 patients (78 percent) whose disease had spread to surrounding lymph nodes before treatment, sensitivity was 75 percent; specificity, more than 94 percent; positive predictive value, more than 75 percent; and negative predictive value, 94 percent. For the ten (32 percent) whose cancer was located in the neck only, specificity was 92 percent and negative predictive value more than 92 percent.

"On the basis of this study, PET-CT performed six to eight weeks after the completion of intra-arterial chemoradiotherapy for advanced squamous cell carcinoma of the head and neck is a valuable tool for measuring treatment response and facilitating clinical decision making," they conclude. "In addition to early prediction of treatment response, PET-CT provides early detection of distant metastases, which permits earlier intervention in patients with distant disease. Further investigations of PET-CT in homogenously treated patient populations with consistent timing of post-treatment scans are necessary to more clearly elucidate the role of this imaging modality in the management of advanced squamous cell carcinoma of the head and neck."

More information: Arch Otolaryngol Head Neck Surg. 2009;135[11]:1119-1125.

Source: JAMA and Archives Journals (news : web)

Citation: Imaging techniques may help predict response to head and neck cancer treatment

(2009, November 16) retrieved 1 May 2024 from
https://medicalxpress.com/news/2009-11-imaging-techniques-response-neck-cancer.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.