Hyperfractionated radiotherapy improves survival in head and neck cancer patients

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The use of an intensified form of radiotherapy in patients with locally advanced head and neck cancers can improve overall survival rates compared with standard radiation therapy, according to results from a large study to be presented on Saturday at the 2013 European Cancer Congress (ECC2013) [1].

A comparison of altered fractionation radiotherapy (AFRT) with standard fractionation radiotherapy (SFRT) in a meta-analysis of more than 11,000 patients showed an eight percent reduction in the risk of death in the AFRT group, as well as a nine percent reduction in the risk of progression or death.

Dr Pierre Blanchard, a radiation oncologist from the Institut Gustave Roussy, Villejuif, France, will tell the congress that, although concomitant chemoradiation (CRT), where radiotherapy and chemotherapy are delivered together, remains the standard of care for patients with locally advanced head and neck squamous cell carcinomas, AFRT should be considered when treatment intensification is sought-after and CRT is not feasible because of other pre-existing conditions such as cardiac and renal disease.

AFRT is an intensified radiotherapy treatment that can be given in various schedules. The first is hyperfractionation, where radiotherapy is given twice daily ten times per week, resulting in a higher total dose of around 80 Grays (Gy) [2] compared with the dose of 70 Gy given using SFRT in the same overall time (around seven weeks). The second way

uses an accelerated schedule, where the overall treatment time is reduced but the dose is kept at the same level or at a lower dose. AFRT is associated with increased acute side-effects but not late side-effects, compared to SFRT.

"After than more than seven years patient follow-up, our research has shown that the higher dose intensity of AFRT works to improve outcomes," says Dr Blanchard. "The hyperfractionated regime is the most effective in terms of overall survival. Indeed, in this group of trials the risk of death is reduced by 18% by the use of hyperfractionated radiotherapy, with 41% of patients alive at five years compared to 33% in the SFRT group. While the acute side-effects of AFRT are increased compared to those experienced by patients on SFRT, the late side-effects are comparable and, overall, side-effects are more than compensated for by the significant increase in survival in the AFRT group."

The meta-analysis was carried out by an international collaboration known as MARCH, including many countries in Europe, the USA, Canada, and Brazil, Egypt and developing countries through the International Atomic Energy Authority. The researchers say that the survival benefits are mostly related to improvements in locoregional control, the area located close to the primary tumour being by far the most common first site of relapse in this disease.

"These data are a major advance for understanding the role in AFRT in head and neck squamous cell carcinoma," says Dr Blanchard. "By carrying out a large-scale analysis such as this one, we believe that we have provided enough evidence to indicate that doctors should recommend AFRT as a validated treatment option for head and neck cancer patients."

Professor Cornelis van de Velde, President of ECCO, said: "This large-

scale analysis of patients with head and neck cancer shows that hyperfractionation increases survival, and local control is also improved by the use of this technique. This is an important step forward in the treatment of this devastating disease."

More information: [1] The 2013 European Cancer Congress is the 17th congress of the European CanCer Organisation (ECCO), the 38th congress of the European Society for Medical Oncology (ESMO) and the 32nd congress of European Society for Therapeutic Radiology and Oncology (ESTRO).

[2] One Gray is the absorption of one joule of energy, in the form of ionising radiation, per kilogram of matter.

[3] The research was funded by the French Ministry of Health (Programme Hospitalier de Recherche Clinique) and the French Anticancer League (Ligue contre le Cancer).

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