Nodal irradiation total in chronic rejection of the lung transplant
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Introduction. Chronic rejection remains the leading cause of long-term morbidity and mortality after lung transplantation (NPT). Appears during the first 2 years after transplantation and manifests with progressive functional decline and hyperinflation pulmonary obstructive pattern. The treatment is not well established, including high-dose corticosteroids, immunosuppressive change, immunomodulatory drugs, and the overall nodal irradiation (INT) to interfere in the allogeneic response to the graft and thus provide additional immunosuppression.

Clinical case. 57 year old woman diagnosed of pulmonary emphysema in May’10 Stage IV, refractory to medical treatment, so in July’11 undergoing double lung transplant. A2 acute rejection that responded to steroids postoperatively and continued controls respiratory function. In Dic’11 had a FEV1 = 2.79 l, which decreased, presenting in August’12 significant functional impairment (FEV1 = 1.9 l). Box is considered compatible with restrictive syndrome Graft and amending immunosuppression without getting reverse the situation, so the box is diagnosed as chronic rejection of the NPT Assessment is decided on areas nodal radiotherapy to stop the rejection. 8 Gy have been administered to 0.8 Gy per session (2 sessions per week) on chains lower cervical, supraclavicular, axillary, mediastinal, paraaortic, iliac and femoral, and thymic and splenic space. Have been identified risk organs (lungs V5 = 0%, mean dose = 150 cGy). The treatment was performed in an accelerator with multileaf ONCOR and energy of 6 and 15 MV. Tolerance to treatment was good, and without deterioration of respiratory function.

Conclusion. Although there is little literature, only small series, the INT in cases of chronic rejection post-NPT is an effective treatment (reduced FEV1 decline) and well tolerated, it should be individualized for each case.

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Novel radiation techniques in pediatric tumors management
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Introduction. Advances in MRI/PET-CT planification, intensity modulated radiation therapy (IMRT), fractionated stereotactic radiation therapy (FSRT), stereotactic body radiation therapy (SBRT) and image guided radiotherapy (IGRT), are enhance strategies for the treatment of pediatric tumors.

Objective. To describe how MRI, PET-CT, IGRT, IMRT, FSRT and SBRT have been incorporated to radiotherapy treatments in pediatric tumors in our institution.

Method. Between February 2008 and December 2012, thirty one pediatrics patients were treated. Twelve patients had brain tumors (39%). Seven tumors were planned using a PET-CT 18 FDG (lymphoma, osteosarcoma, nephroblastoma, rhabdomyosarcoma and neuroblastoma). Immobilizer systems (vacuum mattress and thermoplastic mask) were used in all simulations. Image fusion with MRI was used in 18 patients and dosimetry with IMRT in 11 tumors (including intrathoracic, retroperitoneal, intracranial and vertebral tumors). Nine children were treated using FSRT and one patient with SBRT. Doses prescribed were 25.2–54 Gy. Hypofractionated treatments were employed in two reirradiation cases (30 Gy/6 Gy/5 fraction). SBRT was used in a mandibular condyle lesion (24 Gy/8 Gy/3 fraction) and vertebral metastases (16 Gy/8 Gy/2 fraction). Treatment verification was performed in all patients: IGRT (conebeam CT) in 12 patients, Novalis ExacTrac in 14 patients and in 5 patients both systems were employed (craneospinal treatment and intracranial boost in three patients). Most of the patients (90%) received concomitant chemotherapy.

Results. After a median follow up of 14 months (1–60) the local control was achieved in 23 patients. Two patients died due to progressive distant metastases. Maximal acute toxicities were grade 3 in 9.6% of patients. No acute or chronic toxicity grade 4 or 5 was observed.

Conclusion. The incorporation of MRI, PET-CT 18 FDG, IMRT, FSRT, SBRT and IGRT is a feasible, safety and accurate treatment for pediatrics tumors. Benefits and toxicities of this approach should be evaluated in prospective clinical trials in order to define the role of this advances in pediatric tumors.

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