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Evaluation of Regional Metabolic Abnormality and Treatment Effect in Patients with Narcolepsy

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Purpose: The aim of the present study was to evaluated regional metabolic abnormalities in untreated narcoleptic patients and the changes in regional cerebral metabolism after treatment with modafinil. **Methods:** Eight drug free narcoleptic patients (mean age of 17±1 yr) participated in this study. Two [^{18}F]fluorodeoxyglucose positron emission tomography (FDG-PET) scans before and after a 2-week titrated modafinil treatment (target dose = 100 ~400 mg/day). The PET data were analyzed by using statistical parametric mapping methods to identify the regional cerebral abnormalities compared with those of healthy young controls. In addition, treatment effect was evaluated by comparison between before and after treatment scan. **Results:** In narcolepsy patients, a significant reduction of regional metabolism was demonstrated in the brain stem, bilateral hypothalamus, posterior thalamus, hippocampus, parahippocampal gyrus, and adjacent perihinal area on pretreatment scans compared with those of healthy subjects. The decrease glucose metabolism was also found in the occipital cortex and cerebellum. The patients could control daytime sleepiness after treatment. Posttreatment scan showed a significant increase in regional metabolism in the left hippocampus. **Conclusion:** This study demonstrated the metabolic abnormalities and the effect of modafinil treatment in narcoleptic patients in the sleep associated regions. This results could be helpful to understand the pathophysiology of the narcolepsy and treatment mechanism.

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Radioimmunotherapy in Refractory B-cell NonHodgkins Lymphoma with I-131-Labeled Chimeric Anti CD-20 C2B8 (I-131 rituximab): Preliminary Result

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Purpose: Recently, the native chimeric human-mouse anti CD-20 antibody IDEC-C2B8 (Rituximab) has been widely applied in NHL. This ongoing phase study was to evaluate whether radioimmunotherapy (RIT) with I-131 rituximab is effective in refractory B-cell NHL. **Methods:** Inclusion criteria were as follows: B-cell NHL with relapsed or refractory to primary standard therapy, measurable disease, adequate hematologic, renal, and hepatic function, informed consent. The rituximab (Mabthera®, Roach) was radiolabeled with iodine-131(I-131) using a modified chloaramine T method with high radiochemical purity (95%) and preservation of immuno-reactivity. All patients received loading doses of unlabeled rituximab (median, 40 mg; range, 20~70 mg) immediately prior to administration of therapeutic dose (51.4~152.2 MBq/kg), and then underwent gamma camera scan. **Results:** 11 patients were enrolled (4 low-grade B-cell NHL, 7 DLBCL, median age 63 years). Patiens had received a median of three prior chemotherapy regimens. The objective response rate was 36.4% (1 CR, 3 PRs). These all responses were observed in low-grade B-cell NHL, except one with DLBCL. Adverse events were primarily hematologic toxicities; the incidence of grade 3/4 neutropenia, thrombocytopenia, and anemia was 27.3%, 45.5%, and 18.2%, respectively. The treatment-related mortality was observed in one patient, who had been previously treated with high-dose chemotherapy plus TBI with autologous stem cell transplatation. **Conclusion:** RIT with I-131 rituximab seems to be effective tolerable in refractory low-grade B-cell NHL, although modest activity in refractory DLBCL. Further studies to define the efficacy of I-131 rituximab in DLBCL are warranted.