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NIMOTUZUMAB USAGE IN PROGRESSIVE HIGH GRADE GLIOMAS

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Introduction - Purpose : Nimotuzumab is humanized monoclonal antibody against to epidermal growth factor receptor.1 It is using for head and neck squamous cell cancer, pancreatic cancer, nasopharynx cancer, cervical cancer and high grade glial tumors.2,3,4 Efficacy without associated toxicities is an important feature which differentiates nimotuzumab from other targeted therapies against EGFR.5,6 Nimotuzumab showed an excellent safety profile and significant survival benefit in combination with irradiation.7
Methods - Tools : We practiced nimotuzumab therapy in five young adult patients of three women and two men who have recurrent glial tumors. Postoperative diagnosis of the patients: two were glioblastomas, one was anaplastic oligodendrogliomas, one was astrocytomas and one was oligodendrogliomas. Patients with high grade glial tumors received radiotherapy with temozolamide after surgery. Progression was observed during the treatment of maintenance temozolamide and nimotuzumab applied after bevacizumab irinotecan combination therapy. Patients with low-grade glial tumors were treated with temozolamide as first-line treatment and second-line bevacizumab irinotecan combination therapy after relapse. Four patients who were eligible were given gamma knife in addition to chemotherapy. Since patients receive radiotherapy, nimotuzumab was administered alone. Five patients received a total of 59 times of nimotuzumab ranging from 2 to 20 (median 12 times). Nimotuzumab was administered in the form of induction therapy at 200 mg per week for 6 weeks followed by administration of 200 mg every two weeks. Patients were followed up with cranial MRI every 2 months. Patient with astrocytoma was in intensive care unit when nimotuzumab treatment was started. After 2 doses, she died before completing induction therapy. When other patients were evaluated, a median 5.25 months (ranges 3-8 months) PFS was obtained in the third line treatment of progressive glial tumors. After progression patients received forth and fifth line therapies.
Findings :
Discussion : Nimotuzumab is thought to work best in the situation of EGFR overexpression, reducing invasiveness and angiogenesis, inducing apoptosis of the tumour cells and subsequent tumour regression.8,9,10 Interestingly, however, there was no obvious correlation found of nimotuzumab efficacy with the EGFR status.8 Despite being in clinical use as 'radiotherapy sensitizing agent' in gliomas,11 in our patients who can not undergo reirradiation, nimotuzumab had contributed 5.25 months of PFS even in the case of third-line treatment. This contribution suggests that an EGFR-related process is underway and that there is a response to treatment. Another issue is intrathecal usage of nimotuzumab. When leptomeningeal metastasis develops in NSCLC, overall survival is approximately 3 months. In a study involving 20 cases of leptomeningeal metastases with NSCLC, intrathecal administration of nimotuzumab alone or combination therapy with methotrexate has shown overall survival to be 5 months. As well as overall survival over one year in two of these patients.12,13 It is necessary to investigate the administration of nimotuzumab in intrathecal alone or in combination therapy in addition to intravenous therapy in patients with glioblastoma

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