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Editorial

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Axitinib radiotherapy combination in rcc cancer**Yasemin Benderli Cihan**

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Received Date: July 01, 2019 / **Accepted Date:** July 11, 2019 / **Published Date:** July 13, 2019**Abstract**

In conclusion, metastatic RCC has been a prototype of targeted cancer therapies as a result of advances in molecular medicine. Axitinib and RT combination approaches, one of the targeted therapies, have been shown to increase radiosensitivity in preclinical studies. The evaluation of the treatment regimens and the results of the Axitinib and RT combination therapy for metastatic RCC cases with phase 2 and 3 studies will be important for the patient.

Keywords: Axitinib; Radiotherapy; RCC cancer

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The general approach to cancer treatment is the addition of systemic chemotherapy to local treatments such as surgery and radiotherapy. In this way, it is tried to achieve success in all patients with similar treatment regimens in different types of cancer. In contrast, targeted therapies have been developed in the treatment of cancer in recent years. Thus, in patients with cancer, the patient and the tumor were given the chance to offer an individualized treatment specific to the patient. Individualized treatment has opened a new era in cancer treatment. With this treatment, it is aimed to give the right medicine at the right time, the right patient, at the right time [1-2].

In recent years, there have been positive developments in targeted therapies and immunotherapy in the treatment of metastatic

renal cell cancer (RCC). Previously, immunotherapies such as interferon alpha and interleukin-2 were used as the only treatment option for this tumor. Currently, seven new agents including sunitinib, sorafenib, axitinib, pazopanib, bevacizumab, everolimus and temsirolimus have been approved for metastatic RCC. Many other molecules are being developed. Advances in metastatic RCC have markedly increased with such medications [1-5].

Data consistently support the benefits of monotherapy with a selective VEGF path inhibitor in patients with untreated advanced or metastatic RCC. In addition, these agents have a meaningful role for further treatment of patients who progress after immunotherapy or after therapy with molecular target in the future. Blockage of the VEGF pathway takes place in

two pathways. These; Small molecule tyrosin kinase inhibitors (TKIs) that block the intracellular part of the VEGF receptor (sunitinib, pazopanib, cabozantinib, axitinib, sorafenib) and monoclonal antibodies (bevacizumab) binding to circulating VEGF that inhibit binding to the VEGF receptor [1-4].

Axitinib is a second-generation VEGF receptor inhibitor developed to overcome resistance to first-generation VEGFR inhibitors and is an oral agent with VEGFR-1, -2 and -3 inhibitor [1-4]. The randomized Phase III AXIS study by Rini et al. it was observed that axitinib was disease-free survival (PFS) compared to Sorafenib 6,7 and 4,7 months ($p < 0,0001$), and the improved objective response rate was 19% versus 0.9% ($p = 0,0001$). However, overall survival (OS) was similar to Axitinib, Sorafenib. In terms of adverse effects, Axitinib was associated with increased hypertension and hypothyroidism and less hand-foot syndrome compared with Sorafenib [1]. With this study, Axitinib has been approved as standard second-line therapy in TKI refractory patients. In a retrospective study of the efficacy of Everolimus and Axitinib treatments after VEGFR inhibitor by Guida et al. there was no statistically significant difference between OS and PFS. In a randomized phase II trial, Rini et al. evaluated Axitinib for side effects and 213 patients were treated with Axitinib (5 mg twice daily) for four weeks. In addition to appropriate patients, further treatment with Axitinib dose titration (tolerability of 5 to 7 to 10 mg twice a day), and placebo dose titration with axitinib was applied to the other part. The median PFS score was 14.5 months and the objective response rate was 48% among all patients. As the dose increased, these two response rates increased. In patients with diastolic blood pressure ≥ 90 mm / Hg compared to patients with lower diastolic blood pressure, objective response rates (65% vs. 50%) and median PFS (23 months - 14 months) were found to be higher [4].

At the same time, the use of Axitinib and RT combination therapy in RCC cancer for further and long-term efficacy is investigated.

Although RCC is a tumor that is resistant to conventional RT. In preclinical studies, RCC has been reported to show higher radio sensitivity when using a program subject to ablative, hypo fraction in RT [5-7]. There are currently no phase 2 and 3 studies evaluating this combination in the literature.

In conclusion, metastatic RCC has been a prototype of targeted cancer therapies as a result of advances in molecular medicine. Axitinib and RT combination approaches, one of the targeted therapies, have been shown to increase radiosensitivity in preclinical studies. The evaluation of the treatment regimens and the results of the Axitinib and RT combination therapy for metastatic RCC cases with phase 2 and 3 studies will be important for the patient.

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