Allogeneic hematopoietic cell transplantation for treatment of myelofibrosis patients in JAK-inhibitor era

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Despite the introduction of JAK inhibitors, several data show that the number of transplants is still increasing in myelofibrosis (MF). JAK inhibitors can alleviate patient symptoms and increase survival but they cannot modify the course of the disease. Moreover, more than half of patients who took ruxolitinib had to discontinue ruxolitinib because of disease progression or side effects. Therefore, allogeneic hematopoietic cell transplantation (allo-HCT) is still the only treatment of choice aiming at improving long-term disease-free survival. Generalization of reduced-intensity HCT is another reason for increasing the number of transplants in MF because MF is a disease mainly occurring in the elderly.

Pre-transplant performance status is an important prognostic factor for transplantation. JAK inhibitors can lessen constitutional symptoms and splenomegaly and thus help improve patient’s pre-transplant performance status in patients with low-performance status. The realization rate of transplantation can also be positively influenced by this favorable effect. In prior several studies revealed that transplant outcome was more favorable in patients who responded to JAK inhibitors compared with those who did not.

JAK inhibitors may also have potentially harmful effects on transplantation. Prior studies revealed that ruxolitinib influenced a defensive immune cell and negatively impacted on protecting against infection. Clinical data also demonstrated the increased risk of infection, especially viral infection, in patients on ruxolitinib. Therefore, the peri-transplant use of the drug can increase the risk of infection after transplantation. Another important potential harm of JAK inhibitor treatment before transplantation is obscuring the proper timing of transplantation, especially in patients responding to JAK inhibitors.

This talk will summarize the data on the use of JAK inhibitors before transplantation, and analyze the pros and cons of the role of JAK inhibitors on transplantation in the era of JAK inhibitors. The strategy for transplant using JAK inhibitors will also be discussed.