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Supportive Care in Hematology Complementing the Cytotoxic Chemotherapy towards Remission

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Opinion

Supportive care is an area of high importance in Oncology. The European Society of Medical Oncology (ESMO) and the American Society of Clinical Oncology (ASCO) are continuously updating their clinical practice guidelines emphasizing on the importance of supportive care to achieve the anti-neoplastic treatments. Nowadays, it is more essential in malignancies treated with curative intent as previously compared to palliative settings.

Hematologic malignancies are quite different from solid tumors. These entities don't follow the theory of metastatic disease and they may enter in remission despite presenting in advanced stage via the administration of cytotoxic myelosuppressive regimens and sometimes dose intensification followed by Bone Marrow Transplant (BMT). Therefore, supportive care is mandatory in order to achieve the planned treatment without dose modification or cycle delay. It will act by reducing the treatment toxicities and related complications, so that the patients attain remission not at an expanse of their lives. Patients diagnosed with leukemia or lymphoma are predisposed to a wide spectrum of life threatening infections. The underlying hematologic disease as well as the aggressive cytotoxic chemotherapies make them immunosuppressed and more susceptible to infections. These are usually fatal and may lead to death even with maximization of antimicrobial agents. Thus, it is critical to treat pre-emptively and empirically the neutropenic patients and the febrile neutropenia episodes: adequate broad spectrum antibiotics, antivirals and antifungals according to the clinical and radiological findings. Furthermore, the cytotoxic treatments and the corticotherapy are associated with a deleterious irreversible effect on the cell mediated immunity increasing the risks of opportunistic infections. So, a prophylactic treatment with antiviral, antifungal and sometimes antibacterial agents must be given conferring to the myelotoxicity of each chemotherapy protocol. After the major advances in the management of infectious complications, mortalities related to septic shock have decreased and the patients were able to complete their treatments increasing the chances of remission. Another problem that is more often seen with hematologic malignancies is the transfusion requirements during and between treatments. The patients suffer from long term aplasia and pancytopenia, especially after induction chemotherapies or post allogeneic BMT. The transfusional support is essential to overcome the aregenerative bone marrow: red blood cells and platelets transfusion to decrease the tissue related hypoxia and the risk of bleeding. Moreover, some diseases are associated with a disseminated intravascular coagulopathy and are at an imminent risk of death without an adequate transfusion support and chemotherapy. Other protocols are associated with a high risk of short term neutropenia and require the administration of granulocyte colony stimulating factors GCSF. On the other hand, the majority of the protocols in Hematology are associated with a moderate to high emetogenicity and patients must receive different classes of anti-emetics before, during and after the chemotherapy. Another complication that is more common in hematologic malignancies is the Tumor Lysis Syndrome (TLS), either spontaneous or following the administration of the anti-neoplastic treatment. These are tumors with high proliferation rates and TLS is a serious complication. The related morbidities have markedly decreased after the instauration of hypo-uricosuric agents, aggressive hydration and management of electrolytes imbalances. Patients treated with allogeneic BMT will suffer from severe debilitating mucositis, diarrhea, colitis and strict neutropenic isolation added to a prolonged period of transfusion requirements and an aggressive infectious support secondary to the long term aplasia. Consequently, they must receive an appropriate nutritional support to overcome their catabolic syndrome and cachexia. An adapted physical therapy should be also applied to prevent sarcopenia and muscle wasting. Additionally, these patients are emotionally frail and must be followed by psychologists to meet their emotional needs. In conclusion, supportive care is essential in hematologic malignancies. It is an integrated

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backbone treatment as important as the chemotherapy. Hematologists should always remember that they are treating "patients-humans" not "diseases-bone marrows-molecular results". The supportive care contributes to the patients' remission which can't be achieved with chemotherapy alone. However, it has also a major role beyond the remission in survivors: the psycho-social needs, the fertility and sexuality needs and the practical needs (the re-integration in the social and work life styles, the daily living activities).