



Role of Clinical Pharmacists in Hematopoietic Stem Cell Transplantation Centers

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Short Communication

Clinical pharmacists (also called pharmacotherapists) are healthcare professionals that help physicians to optimize the clinical services including therapies and diagnostics and to provide the best possible health outcomes. They are also totally competent experts that can direct the process of standard medical practice individually. There are lots of clinical tasks in daily practice which could only be accomplished optimally by clinical pharmacists like stratification of poly-pharmacies, medication reconciliation, pharmacokinetic (PK)-based dosing and some physician/patient educations. Recently, categorization of medical services in numerous specialized or sub-specialized fields and continuous development of new medications make this role in clinical wards, even more critical. Increasing utilization of novel medication including expensive biotechnological products in ultimately complicated settings with huge health and financial burdens obligates the presence of considerably involved clinical pharmacists. An exquisite example of such situations is hematopoietic stem cell transplant (HSCT) settings.

The process of HSCT involves the intravenous administration of healthy or modified stem cells obtained from an autologous or allogeneic source to reestablish hematopoietic or immune function in patients with genetic, metabolic, bone marrow or immune system defects. This life-saving approach is accompanied by innumerable adjunctive therapies, work-ups and complications. Only a portion of this process, which is a life-time involvement, may include chemotherapy, irradiation, anti-microbial prophylaxis and treatment, immune suppression, pain management, lab testing, imaging and therapeutic drug monitoring.

Considering all these facts, several issues will rise in optimization of patient management. The first one would be requirement for patient-specific or personalized therapeutic regimens. Studies have shown that exclusive pharmacodynamics and pharmacokinetic characteristics of the population of HSCT candidates can produce different clinical responses, compared to other individuals including recipients of solid organ transplants [1]. The next, would be management of PK interactions in presence of multiple potentially toxic medications. Also PK alterations of each drug have been observed during different phases of post-transplant period that needs close monitoring of levels and dose adjustments [1]. Some of medications which are used for HSCT patients are very expensive with sensitive structures. Therefore specialized handling for preparation and administration of them is mandatory, in order to achieve the best therapeutic response. Sometimes such administrations should be instructed by pre-defined guidelines and periodical drug-utilization-evaluation studies [2]. And at last, adverse reactions or toxicities are highly probable in HSCT field due to use of naturally toxic compounds, poly-pharmacy and diminished inborn protective mechanisms in the involved patients [3]. Management of these complications requires a great deal of knowledge and experience about detection, evaluation and correction of drug related adversities.

If we consider all the above-mentioned issues, we can easily understand that HSCT setting will always need a capable clinical pharmacist.

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