implementation of post HSCT revaccination was well received by patients. A high proportion of allogeneic and early autologous HSCT recipients successfully underwent revaccination.

470 SUCCESSFUL TECHNOLOGICAL IMPLEMENTATION AT AN INNER CITY MEDICAL CENTER

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Computerized order entry offers the potential of reduced medical errors arising from prescribing or administration. Our medical center has recently rolled out a new computerized system. This system does not provide chemotherapy specific ordering. The Pediatric HSCT program at University of Miami/Jackson Holtz Children's Hospital has been utilizing a dedicated chemotherapy specific commercially available system for outpatient chemotherapy prescribing for the last four years. This system is one of the few computerized systems available specifically for chemotherapy. We have recently implemented computerized order entry for inpatient HSCT. Standardized order templates for chemotherapy (TBICY, BUCY, CampFluMel, etc) were created in an attempt to diminish prescribing and administration errors. The protocols were flagged for high alert medications (ganciclovir, neupogen, ATGAM) in an attempt to diminish administration errors (protocol violations). A nursing flowsheet and extensive nursing in-service was implemented simultaneously. Since implementation in the inpatient setting we have observed significantly fewer deviations. Novel technologies have the potential to diminish medical errors and improve overall patient care.

PHARMACY ORAL

471 AN APREPITANT CONTAINING REGIMEN CONTROLS THE DELAYED NAUSEA AND VOMITING ASSOCIATED WITH HIGH-DOSE MELPHALAN FOLLOWED BY AUTOGLOUS BLOOD STEM CELL TRANSPLANTATION IN PATIENTS WITH MULTIPLE MYELOMA

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Background: Aprepitant is approved for the prevention of acute and delayed nausea and vomiting associated with highly emetogenic chemotherapy. It has not, however, been studied in patients receiving high-dose melphalan prior to an autologous peripheral blood stem cell transplantation (PBSCT). Objective: The principal objective was to determine the ability of an aprepitant containing regimen to prevent delayed vomiting 24-120 hours after the administration of high-dose melphalan followed by an autologous PBSCT in patients with multiple myeloma (MM). Methods: The study period was from days -1 through +3. Eligibility criteria included: age ≥18 years, diagnosis of MM undergoing an autologous stem cell transplantation with a busulfan-based conditioning regimen. Patients were assigned to a test dose of busulfan at 0.8 mg/kg as a 60 minute intravenous infusion. Serial blood samples were drawn at eight time points - from 15 minutes before dose to 6 hours after dose completion. Pharmacokinetics (PK) studies were then performed at the Seattle Cancer Care pharmacokinetics laboratory. The conditioning dose of busulfan was calculated by multiplying the test dose in mg/AUC × 4800. After the first conditioning dose of busulfan was administered, the same procedure was repeated to test busulfan PK. If the busulfan AUC was therapeutic (between 4800 μM×min and 5200 μM×min) then the same dose was continued, otherwise the third and fourth doses of busulfan were adjusted proportionally.

The test dose of 0.8 mg/kg intravenous did not have any hematological side effects. The mean historic dose (solely based on weight) was 3.2 ± 0.1 mg/kg and the mean dose based on the test dose was 3.5 ± 0.5 mg/kg (p = 0.02). In 17 patients we also analyzed PK after the first day of conditioning regimen. AUC values of busulfan calculated from test dose and from day 1 dose were not different (p = 0.15). The mean dose of busulfan based on test dose was 3.5 ± 0.5 mg/kg while the final dose based on day 1 busulfan PK was 3.6 ± 0.7 mg/kg (p = 0.9). Two MM patients who were on dasatinib and nilotinib had unusually high AUCs of 6065 and 5920 μM×min respectively suggesting a possible drug interaction between busulfan and tyrosine kinase inhibitors. Our study suggests that pre-transplant busulfan test dose reliably predicts the actual conditioning dose and can be safely utilized to target desirable AUC.

Test dose of busulfan can be conveniently performed anytime before transplant and therefore can safely replace the first dose PK at centers where quick busulfan assay cannot be performed.

472 PRE-TRANSPLANT BUSULFAN TEST DOSE IS A RELIABLE ALTERNATIVE TO FIRST BUSULFAN IV DOSE FOR PHARMAKINETICS STUDIES IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION


In this study we tested the efficacy of a test dose of IV busulfan in targeting blood levels of this drug during the conditioning regimen prior to an allogeneic hematopoietic stem cell transplant. We analyzed blood samples of 23 patients undergoing allogeneic hematopoietic stem cell transplantation with a busulfan-based conditioning regimen. Patients received a test dose of busulfan at 0.8 mg/kg as a 60 minute intravenous infusion. Serial blood samples were drawn at eight time points - from 15 minutes before dose to 6 hours after dose completion. Pharmacokinetics (PK) studies were then performed at the Seattle Cancer Care pharmacokinetics laboratory. The AUC was determined using WinNonlin Professional software. The conditioning dose of busulfan was calculated by multiplying the test dose in mg/AUC × 4800. After the first conditioning dose of busulfan was administered, the same procedure was repeated to test busulfan PK. If the busulfan AUC was therapeutic (between 4800 μM×min and 5200 μM×min) then the same dose was continued, otherwise the third and fourth doses of busulfan were adjusted proportionally.

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Test dose of busulfan can be conveniently performed anytime before transplant and therefore can safely replace the first dose PK at centers where quick busulfan assay cannot be performed.

473 RABBIT ATG (THYMIGLOBULIN R) PHARMAKINETICS IN PEDIATRIC PATIENTS RECEIVING A MATCHED UNRELATED DONOR BONE MARROW TRANSPLANTATION


Objective: The pharmacokinetics of active and total rabbit ATG (rATG) were determined in children with hematologic malignancies receiving a matched unrelated donor (MUD) bone marrow transplantation (BMT). Methods: 13 pediatric patients (n = 13) undergoing MUD HSCT with a non T-cell depleted graft received a conditioning regimen of 12 Gy TBI, thiotepa (5 mg/kg q12h × 2 doses day-4) and cyclophosphamide (60 mg/kg × 2 days -3, -2). GVHD prophylaxis consisted of cyclosporine and methotrexate.