findings included lytic lesions, pathological fractures or compression fractures of vertebral bodies that were not seen well by the skeletal survey. However, there were no significant differences in the median PFS or OS between the two patient groups. There were total of 9 patients that had no bony lesions in either the survey or the CT scan and their PFS and OS were not different either. We conclude that CT scan of the skeleton is more sensitive in defining existing bony lesions in MM patients at diagnosis, although these extra findings may not have any impact on the PFS or OS of patients undergoing SCT. The CT scan findings may have implications to palliative and supportive care treatments for these patients.

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FEWER PULLS REQUIRED WHEN USING A POWERED BONE MARROW BIOPSY SYSTEM TO OBTAIN CORE SAMPLES IN THE MULTIPLE MYELOMA PATIENTS POPULATION

Anaissie, E.J.[1], Lorsbach, R.B.[1], Johnson, K.D.[1], Hill, M.W.[2], Philbeck, T.E.[2] [1] University of Arkansas for Medical Sciences, Little Rock, AR; [2] Vidacare Corporation, Shavano Park, TX

Introduction: A study was conducted to compare a new powered bone marrow sampling device to traditional manual bone marrow sampling devices. The specific objectives of the study were to examine the number of passes required to obtain a satisfactory bone marrow core sample and measure the length of samples obtained from each pull, using each device-type; and compare the results.

Methods: All patients had been diagnosed with multiple myeloma and had undergone previous bone marrow biopsy procedures. Clinicians were already well experienced using the manual device, but had only limited experience with the powered device. Following consenting procedures and local anesthetic administration, 2 biopsy procedures were performed unilaterally on each patient; one using the traditional manual device and one using the powered device. The manual device was a Jamshidi 11 gauge × 4 inch needle (Cardinal Health, Dublin, OH). The OnControl powered device included an 11 gauge, 102cm needleset (OnControl, Vidacare Corporation, Shavano Park, TX). The device-type for the first procedure was alternated from one patient to the next. Data collected included the core specimen length obtained for analysis, and the number of pulls required for a satisfactory specimen—defined by pathologists as a core sample at least 1.0cm in length. An "ideal" specimen was defined by pathologists as one with a length of ≥ 1.7cm. Pathology graded specimens as Satisfactory, Unsatisfactory, or Limited. For study purposes, up to 3 passes were allowed to obtain core specimens. Results were compared between device-types and pull sequence. Data analysis, including descriptive statistics, *t*-tests, and Chi-square analysis was performed using SPSS Statistics 19.0 software (SPSS, Inc. Chicago, IL), with an alpha level of 0.05.

Results: Over a 30-day period, double biopsy procedures were performed for 20 patients by 4 medical clinicians (1 nurse and 3 medical assistants). See Table for specific results.

Conclusions: Study results suggest that, for multiple myeloma patients, the Powered bone marrow biopsy device may be preferable to traditional Manual devices. This is due to the ability of operators to consistently obtain ideal or adequate core biopsy specimens with only one pass. Fewer passes means faster procedures and may result in a reduction in pain to the patient, as well as less fatigue to the clinician/operator.

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SUCCESSFUL AUTOLOGOUS STEM CELL TRANSPLANT FOLLOWING A COMBINED HEART-KIDNEY TRANSPLANTATION FOR AL AMYLOIDOSIS

William, B.M., Raichlin, E., Um, J.Y., Morris, M.C., Miles, C.D., Groggel, G.C., Faber, E.A. University of Nebraska Medical Center, Omaha, NE

Background: Simultaneous cardiac and renal involvement is associated with a particularly poor prognosis in patients with AL amyloidosis. High-dose melphalan followed by autologous stem cell transplantation (ASCT) offers the best chance for long-term survival in patients with AL amyloidosis. Eligibility criteria for ASCT differ between hematologic centers, because this treatment is associated with high levels of mortality, which are increased by cardiac and/or renal involvement. However, successful ASCT was reported after cardiac and renal transplantation.

Case Report: We report a case of a successful ASCT following combined heart and kidney transplantation in a patient with systemic AL amyloidosis. The recipient was a 61-year-old man with end-stage renal failure associated with restrictive cardiomyopathy secondary to AL amyloidosis. On presentation, cardiac biopsy showed cardiac amyloid involving the intramural arteries and interstitium and kidney biopsy showed renal amyoid with lambda light chain deposition. Initial bone marrow biopsy showed a 40-50% cellular marrow with 4% plasma cells and serum lambda light chains were elevated at 37.5 mg/ml (5.7-26.3). One year after presentation, he underwent a successful combined heart and kidney transplant. His post-transplant course has been unremarkable except for ureteral leak that required surgical revision. Immune suppression was maintained with tacrolimus and mycophenolate mofetil. Four months after, he received 100 mg/m2 melphalan on D-3 followed by ASCT. The infused stem cells dose was 7.33×10^6/kg (which was half of what was collected). Mycophenolate dose was reduced to allow engrafment and patient was started on growth factors by D+7. Immediate post-transplant course was complicated by neutropenic fever secondary to streptococcus viridans bacetermia which was successfully treated with. Patient had successfully engrafted by D+12 and was discharged from the hospital by D+17. One month after discharge of the hospital, he continues to do well and didn't require any blood product support.

Discussion: ASCT following combined heart and kidney transplant is safe and feasible. We await to observe long-term outcomes though.

Table 1. Study Results

Results by Device-Type	Manual	Powered	p-value
Mean number of passes for procedure	1.95 ± 0.95	1.05 ± 0.22	<0.001†
Core sample obtained on first pass	55%	97%	<0.001†
Mean biopsy core length (mm)	1.11 ± 0.59	1.60 ± 0.36	0.003†
Ideal length core sample obtained on first pass	20%	55%	0.048†
Pathology graded core sample satisfactory or limited	85%	85%	0.889
Results by Pull Sequence	1st	2nd	p-value
Mean number of passes for procedure	1.55 ± 0.89	1.45 ± 0.76	0.704
Core sample obtained on first pass	65%	70%	0.710
Mean biopsy core length (mm)	1.67 ± 0.57	1.77 ± 0.35	0.507
Ideal length core sample obtained on first pass	30%	45%	0.257
Pathology graded core sample satisfactory or limited	80%	90%	0.637

†indicates statistical significance