Clinical Policy Bulletin:
Stem Cells for Hematopoietic Cell Transplant

Number: 0190

Policy

Aetna considers compatibility testing of prospective donors who are family members (first-degree relatives (i.e., parents, siblings and children) or second degree relatives (i.e., grandparent, grandchild, uncle, aunt, nephew, niece, half-sibling)) and harvesting and short-term storage of peripheral stem cells or bone marrow from the identified donor medically necessary when an allogeneic bone marrow or peripheral stem cell transplant is authorized by Aetna.

Aetna considers umbilical cord blood stem cells an acceptable alternative to conventional bone marrow or peripheral stem cells for allogeneic transplant.

Aetna considers medically necessary the short-term storage of umbilical cord blood for a member with a malignancy undergoing treatment when there is a match. Note: The harvesting, freezing and/or storing umbilical cord blood of non-diseased persons for possible future use is not considered treatment of disease or injury. Such use is not related to the person’s current medical care.

Notes:

When a covered family member of a newborn infant has a medically necessary indication for an allogeneic bone marrow transplant and wishes to use umbilical cord blood stem cells as an alternative, Aetna covers the testing of umbilical cord blood for compatibility for transplant under the potential recipient’s plan. Performance of HLA typing and identification of a suitable donor does not, in and of itself, guarantee coverage of allogeneic bone marrow or peripheral stem cell transplantation. Medical necessity criteria and plan limitations and exclusions may apply.

See also the following CPBs related to bone marrow and peripheral stem cell transplantation:
Background

According to the American Academy of Pediatrics (2007), cord blood transplantation has been shown to be curative in patients with a variety of serious diseases. Physicians should be familiar with the rationale for cord blood banking and with the types of cord blood banking programs available. Physicians consulted by prospective parents about cord blood banking can provide the following information:

Cord blood donation should be discouraged when cord blood stored in a bank is to be directed for later personal or family use, because most conditions that might be helped by cord blood stem cells already exist in the infant's cord blood (i.e., pre-malignant changes in stem cells). Physicians should be aware of the unsubstantiated claims of private cord blood banks made to future parents that promise to insure infants or family members against serious illnesses in the future by use of the stem cells contained in
Although not standard of care, directed cord blood banking should be encouraged when there is knowledge of a full sibling in the family with a medical condition (malignant or genetic) that could potentially benefit from cord blood transplantation.

Cord blood donation should be encouraged when the cord blood is stored in a bank for public use. Parents should recognize that genetic (e.g., chromosomal abnormalities) and infectious disease testing is performed on the cord blood and that if abnormalities are identified, they will be notified. Parents should also be informed that the cord blood banked in a public program may not be accessible for future private use.

Because there are no scientific data at the present time to support autologous cord blood banking and given the difficulty of making an accurate estimate of the need for autologous transplantation and the ready availability of allogeneic transplantation, private storage of cord blood as "biological insurance" should be discouraged. Cord blood banks should comply with national accreditation standards developed by the Foundation for the Accreditation of Cellular Therapy (FACT), the U.S. Food and Drug Administration (FDA), the Federal Trade Commission, and similar state agencies. At a minimum, physicians involved in procurement of cord blood should be aware of cord blood collection, processing, and storage procedures.

Eapen and colleagues (2010) stated that umbilical-cord blood (UCB) is increasingly considered as an alternative to peripheral blood progenitor cells (PBPCs) or bone marrow, especially when a human leukocyte antigen (HLA)-matched adult unrelated donor is not available. These investigators aimed to determine the optimal role of UCB grafts in transplantation for adults with acute leukemia, and to establish whether current graft-selection practices are appropriate. They used Cox regression to retrospectively compare leukemia-free survival and other outcomes for UCB, PBPC, and bone marrow transplantation in patients aged 16 years or over who underwent a transplant for acute leukemia. Data were available on 1,525 patients transplanted between 2002 and 2006. A total of 165 received UCB, 888 received PBPCs, and 472 received bone marrow. Umbilical-cord blood units were matched at HLA-A and HLA-B at antigen level, and HLA-DRB1 at allele level (n = 10), or mis-matched at 1 antigen (n = 40) or 2 antigens (n = 115). Peripheral blood progenitor cells and bone-marrow grafts from unrelated adult donors were matched for allele-level HLA-A, HLA-B, HLA-C, and HLA-DRB1 (n = 632 and n = 332, respectively), or mis-matched at 1 locus (n = 256 and n = 140, respectively). Leukemia-free survival in patients after UCB transplantation was comparable with that after 8/8 and 7/8 allele-matched PBPC or bone-marrow transplantation. However, transplant-related mortality was higher after UCB transplantation than after 8/8 allele-matched PBPC recipients (hazard ratio [HR] 1.62, 95 % confidence interval [CI]: 1.18 to 2.23; p = 0.003) or bone-marrow transplantation (HR 1.69, 95 % CI: 1.19 to 2.39; p = 0.003). Grades 2 to 4 acute and chronic graft-versus-host disease (GVHD) were lower in UCB recipients compared with allele-matched PBPC (HR 0.57, 95 % CI: 0.42 to 0.77; p = 0.002 and HR 0.38, 95 % CI: 0.27 to 0.53; p = 0.003, respectively), while the incidence of chronic, but not acute GVHD, was lower after UCB than after 8/8 allele-matched bone-marrow transplantation (HR 0.63, 95 % CI: 0.44 to 0.90; p = 0.01).
data support the use of UCB for adults with acute leukemia when there is no HLA-matched unrelated adult donor available, and when a transplant is needed urgently.

CPT Codes / HCPCS Codes / ICD-9 Codes

CPT codes covered if selection criteria are met:

38204 Management of recipient hematopoietic progenitor cell donor search and cell acquisition
38205 Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; allogenic
38206 autologous
38207 Transplant preparation of hematopoietic progenitor cells; cryopreservation and storage
38208 hematopoietic progenitor cells; thawing of previously frozen harvest, without washing, per donor
38209 transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, with washing, per donor
38210 specific cell depletion within harvest, T-cell depletion
38211 tumor cell depletion
38212 red blood cell removal
38213 platelet depletion
38214 plasma (volume) depletion
38215 Transplant preparation of hematopoietic progenitor cells; cell concentration in plasma, mononuclear, or buffy coat layer
38230 Bone marrow harvesting for transplantation
38240 Hematopoietic progenitor cell (HPC); allogeneic transplantation per donor
59012 Cordocentesis (intrauterine), any method
86813 HLA typing; A, B, or C, multiple antigens
86817 DR/DQ, multiple antigens
86821 lymphocyte culture, mixed (MLC)
86822 lymphocyte culture, primed (PLC)
86920 Compatibility test each unit; immediate spin technique
incubation technique
antiglobulin technique
electronic

Other CPT codes related to the CPB:
Modifiers 4A - Histocompatibility/Blood Typing/Identity/Microsatellite
4Z

HCPCS codes covered if selection criteria are met:
G0364 Bone marrow aspiration performed with bone marrow biopsy through the same incision on the same date of service
S2140 Cord blood harvesting for transplantation, allogeneic
S2142 Cord blood-derived stem-cell transplantation, allogeneic
S2150 Bone marrow or blood-derived stem-cells (peripheral or umbilical), allogeneic or autologous, harvesting, transplantation, and related complications; including: pheresis and cell preparation/storage; marrow ablative therapy; drugs, supplies, hospitalization with outpatient follow-up; medical/surgical, diagnostic, emergency, and rehabilitative services; and the number of days of pre-and post-transplant care in the global definition

ICD-9 codes covered if selection criteria are met: (not all-inclusive):
140.0 - Malignant neoplasm
208.91

Other ICD-9 codes related to the CPB:
V59.02 Donors, blood, stem cells
V59.3 Donors, blood, bone marrow

The above policy is based on the following references:


23. BlueCross BlueShield Association (BCBSA), Technology Evaluation Center (TEC). Transplanting adult patients with hematopoietic stem cells from placental and umbilical cord blood. TEC Assessment Program. Chicago IL: BCBSA; 2001;16(17).


