Whether the subset with cKit mutations should be transplanted in CR1, reinduced with chemotherapy and then transplanted or whether they are capable of being salvaged with molecularly targeted treatment is not known.

The evidence from the collaborative group trials to recommend transplantation in patients with high-risk cytogenetics is mixed. However, the prognosis depends on age, length of CR1, cytogenetic risk group and FLT-3 mutation status. In a retrospective study of the The new paradigm New developments in both chemotherapy and transplantation continue to emerge. Recent preliminary data suggest that the addition of the immunoconjugate Mylotarg to chemotherapy can reduce the risk of subsequent relapse.

This was further suggested to be time related in that the risk is greatest if the Mylotarg is administered within days of the transplant.

A US study conducted by the ECOG group is evaluating the role of adding Mylotarg to the preparative protocol for autologous transplantation. The new molecular knowledge will continue to identify patients at greater or lesser risk than indicated by currently used prognostic factors.

The development of reduced-intensity allografting clearly offers a potentially important contribution to older patients in whom the disease is more prevalent and the relapse risk greater. Table 5.

In the following sections, the impact of SCT on overall outcome and the results of comparative studies will be discussed. Impact of SCT on overall outcome in adult ALL trials The hardest outcome parameter is OS of the total patient cohort, which answers the question of whether a SCT-based treatment approach is able to improve overall outcome.

This is mainly due to an increased RR see Table 5. Published studies show a broad range of results. The intensity of previous treatment may have an important impact on outcome of autoSCT since it leads to a reduction in tumor load.

The use of mercaptopurine and methotrexate is the standard approach. Trials comparing SCT and other approaches Table 5. Interestingly, in most trials the outcome after allo-SCT was superior to registry results. The reason for this remains unclear. Donor versus no donor comparisons Several trials showed no differences in outcome for patients with allo-sibling SCT or without a donor randomization of auto-SCT and chemotherapy.

The special feature of this trial was the use of age greater than or less than 35 years as a prognostic factor. The lowest TRM is observed in syngeneic SCT from identical twins, although the relapse rate is higher in this situation. Disease course after SCT After transplantation, regular evaluation of chimerism and MRD is recommended in order to monitor the disease course. The degree of chimerism correlates with long-term outcome since an increasing amount is associated with the start of relapse.

Nevertheless, there are no clear age cut-off points for sibling or unrelated SCT, which may be performed up to the age of 55 years, or even more with dose-reduced conditioning. For SCT in second or later remission outcome is inferior, as is the case for patients with early compared to late relapse. Autologous Reducing relapse rate into front-line therapy.
For patients without donor or with contraindications to conventional SCT, alternative approaches need to be explored. MRD evaluation before and after SCT is essential, particularly in order to decide whether to give maintenance therapy, or immunotherapy such as donor lymphocyte infusions.

The prophylactic use of donor lymphocytes may be considered in patients with no or low-level GvHD. Future requirements for SCT Large national and even international study groups are committed to the development of chemotherapy schedules and general treatment strategies for adult ALL. Molecular genetics of acute lymphoblastic leukemia. Treatment of adult acute lymphoblastic leukemia. Results of treatment with hyper-CVAD, a dose-intensive regimen, in adult acute lymphocytic leukemia.

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Identical-twin bone marrow transplants for leukemia. How and when should we monitor chimerism after allogeneic stem cell transplantation? Is there a role for minimal residual disease levels in the treatment of ALL patients who receive allogeneic stem cells? Increasing mixed chimerism is an important prognostic factor for unfavorable outcome in children with acute lymphoblastic leukemia after allogeneic stem-cell transplantation: possible role for pre-emptive immunotherapy?

Reduced intensity conditioning and prophylactic DLI can cure patients with high-risk acute leukemias if complete donor chimerism can be achieved. Bone Marrow Transplant ; — 53 Chapter 5 Acute lymphoblastic leukemia in adults. The role of cytotoxic therapy with hematopoietic stem cell transplantation in the therapy of acute lymphoblastic leukemia in adults: an evidence-based review. Outcome of treatment in adults with Philadelphia chromosome-positive acute lymphoblastic leukemia — results of the prospective multicenter LALA trial.

Allogeneic hematopoietic stem cell transplantation as part of postremission therapy improves survival for adult patients with high-risk acute lymphoblastic leukemia: a metaanalysis. Transplantation of peripheral blood stem cells as compared with bone marrow from HLA-identical siblings in adult patients with acute myeloid leukemia and acute lymphoblastic leukemia.

Patients with acute lymphoblastic leukemia allografted with a matched unrelated donor may have a lower survival with a peripheral blood stem cell
Although the majority of pediatric patients with hematologic malignancies are cured, leukemia remains the most frequent cause of death from cancer in children Fig. This chapter reviews the approach to transplantation in the treatment of leukemia and myelodysplastic syndrome MDS in pediatrics. Clinical and biologic features are used to stratify risk and direct treatment Table 6. Initial risk group assignment is based on age, peripheral white blood cell count WBC, central nervous system CNS status, and phenotype determined at diagnosis.

Results of surgical repair in transplanted patients are not yet available. Keratoconjunctivitis sicca syndrome is usually part of a more general syndrome with xerostomia, vaginitis and dryness of the skin. Treatment is based on the management of cGvHD with repeated use of topical lubricants. Topical corticosteroids may improve symptoms but can cause sight-threatening complications if used inappropriately when herpes simplex virus or bacterial keratitis are present.

Topical ciclosporin A or retinoic acid may also be used. Sensitivity to cytotoxic agents and irradiation, infections, and immune-mediated lung injury associated with GvHD are the most prominent factors which contribute to late respiratory complications. Impaired growth of both lungs and chest can be additional factors in children.

Restrictive disease is often stable and may recover, partially or completely, within 2 years. However, some patients do develop severe late restrictive defects and may eventually die from respiratory failure reviewed in reference 3. It has been mainly associated with c-GvHD, but other potential risk factors including TBI, hypogammaglobulinemia, GvHD prophylaxis with methotrexate, and infections have been described. Mortality is high among these patients, particularly in those with an earlier onset and rapid decline of FEV1.

Symptoms consist of non-productive cough, wheezing and dyspnea; chest radiography is normal in most cases. Symptomatic relief can be obtained in some patients with bronchodilators; however, in most cases obstructive abnormalities are not improved by this treatment. Patients with low IgG and IgA levels should receive immunoglobulin to prevent infections, which may further damage the airways. GvHD is probably responsible for the initial epithelial injury to small airways, with further damage caused by repeated infections.

Initial symptoms often resemble those of recurrent upper respiratory tract infections, and then persistent cough, wheezing, inspiratory rales and dyspnea appear. It is not clear to what extent combined immunosuppressive treatment can be effective in the treatment of this disease, which typically does not respond to treatment with steroids.

Azathioprine and mycophenolate may lead to improvement in symptoms in some cases. Prophylaxis and prompt treatment of infections are the most important elements of clinical management and may help to alter the clinical course of a disease whose pace can vary from slow progression to rapidly fatal respiratory failure.

Single or double lung transplantation has been suggested for patients with advanced disease, although the transplanted lung may also be a target for immune-mediated damage. Several causes of liver dysfunction may co-exist, and the pattern of viral serology may be atypical.

Longterm studies of cancer survivors usually show a chronic pattern of liver disease with a mild course. In some patients, discontinuation of chemotherapy favors spontaneous arrest of virus replication. Iron overload in cancer patients is essentially related to multiple transfusions and is therefore most commonly found in long-term survivors of acute leukemia or after SCT.

Therapeutic phlebotomy can reduce iron overload, and normalize ferritin and liver function tests. A clear correlation exists between iron overload and persistent hepatic dysfunction.

However, the clinical consequences of iron overload and therapeutic iron depletion in transplant recipients have not been extensively evaluated. Thus, in long-term survivors liver function should be monitored yearly. Liver biopsy and determination of alpha-fetoprotein level should be considered in patients with chronic hepatitis C infection, to determine the extent of cirrhosis and detect hepatocellular carcinomas.

Patients should be counseled to avoid excessive iron intake, and alcohol. The use of erythropoietin may facilitate phlebotomy in patients with a low hemoglobin level. Early diagnosis can rarely be made using standard radiography alone and magnetic resonance imaging is the investigation of choice.

Symptomatic relief of pain and orthopedic measures to decrease pressure on the affected joints are of value, but most adult patients with advanced damage require surgery. Osteopenia and osteoporosis are both characterized by a reduced bone mass and increased susceptibility to bone fracture.

Preventive measures for osteoporosis must include sex hormone replacement in patients with gonadal failure. Onset of thyroid organ dysfunction varies. It usually starts approximately 5 years after irradiation, although its appearance has been observed as late as 20 years after cancer treatment.

Thus, patients treated with TBI should be evaluated for thyroid function throughout their remaining life. Treatment with l-thyroxine is indicated in all cases of frank hypothyroidism elevated thyroid-stimulating hormone TSH with low free T4 blood levels. Thyroid hormone levels should be measured after commencement of replacement therapy, and dosage should be tailored thereafter to the individual patient and adjusted accordingly.

Children who undergo SCT form a heterogeneous group due to the different treatment protocols employed. In addition, post-transplant factors such as GvHD and its treatment, especially the use of long-term steroids, may induce growth failure in childhood.

Final height achievement has been reported in some studies. In contrast, children who are conditioned with non-TBI regimens, such as
cyclophosphamide or busulfancyclophosphamide, usually grow normally. The major cause of gonadal damage leading to hypergonadotropic hypogonadism is irradiation. Similar damage can also be caused by busulfan. Male gonadal function Radiation to the testes is known to result in germinal loss, with decreases in testicular volume and sperm production and increases in follicle-stimulating hormone FSH.

Radiation therapy may also be toxic to Leydig cells, although at doses higher than those which are toxic to germ Sertoli cells. Alkylation agents decrease spermatogenesis in a dose-dependent manner. In contrast to their prominent effects on germ cell epithelium, chemotherapy effects are less striking on slowly dividing Leydig cells and may be age related.

Following exposure to alkylating agents in prepubertal boys, normal pubertal progression and normal adult levels of testosterone are the rule. Hormonal evaluation, including at least a single measurement of serum luteinizing hormone LH, FSH and testosterone levels, is recommended as a baseline. When abnormalities in testicular function are detected, close co-operation with an endocrinologist is essential in planning hormone replacement therapy or in monitoring patients for spontaneous recovery.

When no abnormalities are noted on history and physical examination but sexual maturity has not been completely attained, these studies should be repeated every 1—2 years. Conversely, in light of the potential for recovery of spermatogenesis and interpatient variations in gonadal toxicity, reminders about contraception should be given.

Female gonadal function In contrast to the process in male survivors, germ cell failure and loss of ovarian endocrine function occur concomitantly in females. Radiation effects are both age and dose dependent. In women older than 40 years at the time of treatment, irreversible ovarian failure is an almost universal result of 4—7 Gy of conventionally fractionated radiation delivered to both ovaries.

In contrast, prepubertal ovaries are relatively radioresistant. Increasing age at the time of TBI has been found to predict ovarian failure.

Premature menopause is very frequent in the setting of HSCT. Ovarian failure has been associated with chemotherapy, especially the alkylating agents, and the gonadotoxicity is dose and age dependent. Serum gonadotropin FSH, LH and estradiol levels should be obtained in children as a baseline Chapter 46 Late effects Both TBI-based regimens and those without irradiation can result in severe damage to the enamel organ and developing teeth.

These defects may be prolonged or permanent. After TBI in children, underdevelopment of the mandible and anomalies in the mandibular joint may also occur. In children, long-term clinical and radiologic followup reveals hypoplasia and microdontia of the crowns of erupted permanent teeth and thinning and tapering of the roots of erupted permanent molars or incisors.

Caries are found more frequently in transplanted patients compared to age-matched healthy children. The defects in dental elements post SCT may occur at any age of tooth development, and only the severity seems to depend on age at SCT. Recommendations to minimize this adverse effect aim to preserve the enamel layer and prevent, by active oral hygiene, dental plaque, periodontal and oral mucosal infections and xerostomia, all of which contribute to the development of caries.

In the absence of clinical evidence of puberty menarche, development of secondary sexual characteristics, in order to assess the need for hormone therapy to induce puberty, these tests are obviously mandatory.

Survivors with concerns regarding fertility are urged to seek a consultation with a reproductive endocrinologist. Fertility following stem cell transplantation Despite the potential gonadotoxicity of pretransplant conditioning, gonadal recovery and pregnancies following SCT are well described.

The precise incidence of fertility following SCT is hard to establish. Median age at HCT was Thirty-four patients reported 54 pregnancies after HCT 26 males, 40 pregnancies; eight females, 14 pregnancies, of which 46 resulted in live births. Prevalence of conception and pregnancy outcomes in HCT survivors were compared to those of nearest-age siblings. Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients, Microvasculopathy in the ocular fundus after bone marrow transplantation.


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Malignant diseases after allogeneic bone marrow transplantation: the case for assessment of risk factors. New malignant diseases after allogeneic marrow transplantation for childhood acute leukemia. J Clin Oncol ; — Starting a hematopoietic stem cell transplant unit Anthony P Schwarer Published guidelines A number of professional organizations have generated guidelines stating minimum standards for facilities and individuals performing HSCT, with the goal of promoting high-quality care in the performance of HSCT.

These guidelines are essential reading for anyone contemplating establishing an HSCT program. This chapter will not recapitulate the guidelines outlined in these publications but will attempt to expand on those practical points that may not necessarily be addressed in those guidelines. These guidelines are also available online at www.

These standards extend and detail the pre-existing standards of EBMT. Ongoing inspections will also be undertaken. International guidelines In February , FACT and JACIE published online, for public review, a draft version of the International standards for cellular therapy, product collection, processing and administration, 3rd edition. It behoves all physicians wishing to commence a new and successful HSCT program at their institution to consider all the aspects of the many components that form part of this potentially life-end ing as well as life-saving treatment modality.
There are published guidelines discussed below that should be read in conjunction with this chapter. The goal of this chapter is to provide a basis, in a more practical way, of what should be considered for the nascent HSCT program. In FACT began providing accreditation to centers involved in HSCT, whether it be patient management, hematopoietic stem cell HSC collection or processing, that successfully passed all aspects of an inspection.

In addition, FACT standards require ongoing assessments of the program. General requirements General facilities The establishment of a new HSCT facility requires considerable forethought and planning.

It will of course be considerably easier to deal with the various hurdles if they have been considered before they occur, and not after buildings are built or refurbished, budgets established or less than ideal practices become accepted as the norm.

An HSCT program is best established as part of a modern, tertiary referral hospital that has an established service managing patients with acute leukemia and other high-grade hematologic malignancies. This will ensure that the units and departments necessary for the management of the HSCT patient, such as the infectious diseases service, the intensive care unit, the blood bank and many others, will have had experience managing neutropenic patients with leukemia — clearly experience that is highly relevant to the HSCT patient.

Support services Routine laboratory support Basic hematologic and biochemical investigations must be available on an urgent basis 24 hours per day every day of the year. A same-day service for the measurement of ciclosporin and tacrolimus levels should be a goal. A microbiology service experienced in the diagnosis of opportunistic infection and a histopathology service experienced in the diagnosis of graft-versus-host disease GvHD are essential. Molecular laboratory support Monitoring for cytomegalovirus CMV reactivation and infection remains important in the allogeneic HSCT setting; quantitative polymerase chain reaction Q-PCR is very sensitive and, of the available tests, is probably the most useful clinically.

Molecular techniques for diagnostic and monitoring purposes of mold infections, such as Aspergillus, remain under development but, almost certainly, will have a similarly important role in HSCT as they currently do for CMV. A diagnostic molecular service can be very useful for the diagnosis of many other infectious organisms such as BK virus, Epstein—Barr virus EBV, various respiratory viruses, tuberculosis and others.

The most commonly recommended dose is cGy. CMV-negative red blood cells and platelets should be available if needed. Diagnostic and interventional radiology, and nuclear medicine As well as all routine diagnostic radiology and ultrasound services, access to a computed tomography CT scanner is essential and access to magnetic resonance imaging MRI is often very useful.

Most patients undergoing HSCT will require a permanent central venous access device. Many hospitals nowadays have a radiology department with interventional radiologists trained in the insertion of a variety of central venous access devices under ultrasound guidance.

A transjugular liver biopsy in a thrombocytopenic or otherwise coagulopathic patient can be the only way to differentiate between veno-occlusive disease VOD, GvHD, hepatitis or drug-induced liver abnormalities. This procedure is usually performed by an interventional radiologist under radiologic visualization.

Nuclear medicine can provide the frequently useful services of gated cardiac blood pool scans, positron emission tomography PET scans and radiolabeled white blood cell scans. Ancillary medical services Infectious diseases services Infectious diseases physicians are crucial to the success of any HSCT program. One or a small group of infectious diseases physicians, with experience in the diagnosis and management of opportunistic infections, should be an integral part of the team that manages the HSCT patient on a day-to-day basis.

Importantly, the infectious diseases physicians will need to develop, implement and monitor the effectiveness of policies established for infection control, infection prophylaxis and the treatment of infection. Infectious diseases input will be particularly important for programs performing allogeneic HSCT although it remains relevant to programs performing only autologous HSCT. Blood bank support A hour per day onsite blood bank is needed for the urgent supply of platelets, red blood cells, fresh frozen plasma, cryoprecipitate and human serum albumin when such products are required.

Intensive care unit ICU The nature of HSCT dictates that a certain proportion of patients will require a level of medical support that cannot be provided by the Nephrology Renal complications will be commonly encountered in the patients of any HSCT program. Pulmonary medicine Complications involving the lung are frequent after HSCT and a pulmonary medicine opinion will often be useful.

The facility to perform pulmonary function tests and bronchoscopies will be essential. Neurosurgery is occasionally necessary for a diagnostic biopsy of an intracerebral lesion or the insertion of an Ommaya reservoir.

Cardiologic opinion can be valuable. Infectious endocarditis is a common differential considered in the HSCT population — urgent access to echocardiography is important. Clot retention, requiring urologic intervention, occasionally occurs. Otolaryngology Sinus infections, particularly with Aspergillus and other molds, are quite common, particularly in the allogeneic HSCT setting.

Access to an ENT service will be needed for invasive diagnostic procedures and surgical debridement in some patients with invasive fungal infections. Undergoing a life-threatening treatment for a life-threatening disease will be a stressful time for the patient and the family. Psychiatric input from a professional with knowledge of Hematology and HSCT, prior to the HSCT, will be useful to deal with any issues present as well as to identify patients at risk so that preventive measures can be put into place or warning signs highlighted so that pre-emptive therapy can begin.

Ongoing psychiatric input post HSCT will be important to help recognize and deal with the long-term problems that can occur in patients with chronic complications such as GvHD. Endoscopy is an important diagnostic tool; gastroscopy and colonoscopy are essential procedures to help differentiate GvHD from infection and other gastrointestinal complications.
Small bowel endoscopy or capsule endoscopy can, on occasions, be useful for investigating complications of the small bowel that are outside the reach of the gastroscope or colonoscope. It is much easier to start an HSCT program in an institution that has an established hematology service which is very familiar with the management of patients with acute leukemia.

Experience in the scenarios and complications encountered in patients with acute leukemia receiving aggressive chemotherapy will provide a sound basis for the management of the very similar scenarios and complications that will be encountered in the HSCT patient population.

Ideally, the institution should have a purpose-built unit. A small program might have only two dedicated beds to manage the expected minimum of 10 HSCTs to be performed each year, although the average-sized unit will have 10 beds to perform 60 or so HSCTs per year. These guidelines also suggest that the number of HSCTs performed each year should ensure that the unit is never empty and Radiation oncology A radiation oncology service is essential.

Particularly for TBI, it is important that it be performed on site. Such patients are often unwell and unstable. Other services that may be needed on occasion include gynecology, dermatology, ophthalmology, anesthetics, orthopedics and neurology. This proportion has ranged from Survival to discharge from hospital and long-term survival to have improved substantially over the past decade.

If this is not possible, adequate numbers of single rooms to house the allogeneic HSCT patients is a reasonable goal. Patients undergoing autologous HSCT are considerably less immunocompromised and hence single isolation rooms for this patient population are less important. The single rooms must have ensuite facilities. Each room must have oxygen and suction facilities. Resuscitation equipment should be immediately available in the unit.

The beds should tilt at both ends. Horizontal dust-accumulating blinds should be avoided, and vertical blinds or blinds within two sealed glass panels should be used. All walls and horizontal surfaces should be smooth and non-porous to prevent trapping of dust and to facilitate easy cleaning on a daily basis. A fold-out bed is all that is necessary. The single most important infection control measure will be to prevent the direct transfer of infectious organisms from one patient to another via the hands or aomite of a healthcare worker.

Good hand hygiene and hand-washing practices are essential for all caregivers and visitors. To facilitate this, antimicrobial hand-washing solutions should be placed in highly visible and easily accessible positions that make it very easy for the healthcare worker to make use of the solutions, and hard for them to forget to use them. For example, a bottle should be placed at the entrance to the unit, outside each room, at the foot of each bed and on every dressing trolley. Each room should have a dedicated sphygmomanometer, oximeter, thermometer and stethoscope.

Patients should be encouraged to bring in personal items such as TV, music player, computer and books, although old or dusty books should be left at home. The unit should have a designated kitchen area available to the patient and their relatives.

Minimization of exposure to infectious organisms It is of considerable importance that HSCT patients be protected from the many potential infectious organisms to which they are susceptible. Infection control measures must be considered when constructing and managing a brand new facility or adapting a pre-existing facility for the management of HSCT patients. Examples include simple strategies such as the prevention of birds gaining access to hospital airintake ducts, and ensuring that those ducts are directed away from any cooling towers to minimize the risk of Legionella infection.

The most important consideration is the prevention of infections with molds, particularly Aspergillus spp. Also important are measures to limit the spread of resistant bacteria as well as preventing the introduction of respiratory viruses into the unit.

Two publications from the CDC5,6 deal with the many issues of infection control that should be considered when constructing a facility that will house immunocompromised patients. Fungal spores are ubiquitous in the environment and their spread is facilitated by building construction, a common occurrence in most hospitals. Indeed, some such patients are now managed partly or entirely in the home.

All doors and windows to the outside should be permanently shut with airtight seals. Entrances to the unit should be through an anteroom that has automatic doors that remain closed unless someone is entering or leaving. All other potential leaks, such as electrical outlets, must be sealed. There should be at least 12 room-air changes per hour. An anteroom can help maintain the positive pressure of the isolation room.

Equipment for the continuous monitoring of the positive pressure areas, with appropriate alarms, should be installed. The HSCT patient with varicella zoster infection shingles requires special consideration. Such a patient requires the usual isolation afforded to all HSCT patients but needs to be isolated from the remainder of the unit; the patient cannot be in a single room under positive pressure that vents into the corridor because this will expose those in the corridor to the virus.

Hence, it would be useful to have at least one single room that is under positive pressure that vents not to the corridor but to the outside or some other appropriate area such as an anteroom with an independent exhaust. This will allow the patient to be protected from the environment and for the remainder of the unit to be protected from the patient.

During times of construction and renovation, additional guidelines and monitoring requirements need to be established. It is particularly important to protect inpatients from this dust on those occasions when the patient leaves the protected environment of the unit. For example, the route to the diagnostic radiology department or to the surgical operating suites should avoid corridors or areas that may be exposed to the dust.

Outpatients and day patients should have routes of access, from arrival at the hospital to their respective areas, that avoid proximity to the construction areas and avoid areas that may have been exposed to dust from the construction site. The clinical director should be familiar with all the aspects of the HSCT program. Physicians should maintain knowledge and skill levels by an appropriate continuing education program. A senior physician should be available for advice to the junior medical staff and, if necessary, to attend to sick patients 24 hours per day days a year.
Therefore, particularly for allogeneic HSCT, greater physician involvement in patient care is important in producing favorable outcomes. The unit should be covered 24 hours per day by appropriately trained and experienced junior medical staff who are able to attend to the patient immediately when required.

The junior medical staff should have experience in the management of sick patients and particularly sick hematologic patients with neutropenia. There must be adequate supervision of the junior medical staff.

The attending senior physician should round on a daily basis, particularly for allogeneic HSCT patients. There should be a detailed handbook for junior medical staff new to the unit which outlines their duties as well as the routines and basics on the functioning of the HSCT program, related disciplines and the hospital.

There should be an educational program for junior medical staff. Nursing staff HSCT programs should have formally trained and experienced nursing staff. There should be an adequate number of experienced nursing staff on each shift, including the overnight shift.

Junior nursing staff must have adequate supervision by the senior nursing staff. There should be a formal education program for nursing staff which should include input from the senior nursing staff and the medical staff. Measures should be in place to recognize and manage this problem.

The co-ordinator serves as a facilitator, educator and point of contact for the patient and their family from the time the transplant is being considered until the time the patient is admitted to hospital. The co-ordinator should make the path to HSCT as smooth as possible for the patient and family.

The co-ordinator may continue to be involved during the inpatient stay and will often be involved in the co-ordination of the post-HSCT follow-up.

The transplant co-ordinator will usually be responsible for the establishment and maintenance of the HSCT waiting list. Duties often include organizing the logistics of getting hematopoietic cells from the donor, related or unrelated, to the patient, and on those occasions when the hospital is acting as a donor center, organizing hematopoietic stem cells to go to a patient in another hospital which may be local, in another state or province, or in another country.

Underweight patients have an increased transplant-related mortality. Psychology Very few patients and families go through a treatment program for a hematologic malignancy with subsequent HSCT without acquiring a number of psychologic scars. An experienced psychologist is an important resource for the program. Special considerations will be needed to prevent the spread of not only Legionella but also other waterborne pathogens.

The most important mode of transmission of methicillin-resistant Staphylococcus aureus MRSA, and probably many other bacteria, is poor hand hygiene. They also targeted the cleaning of shared equipment between uses.

Bottles were replaced promptly when empty. The authors also indicated that the product used must be very accessible and non-irritant with frequent use, that education of new staff was essential, and periodic quality assessments were needed. Hence, most HSCT patients will rapidly become deconditioned.

Advice on minimizing the risk of lung infections is also important. The pharmacist should also check all chemotherapy orders and should review all the chemotherapy protocols of the program. There must be a proper cytotoxic dispensing facility. Pastoral care Appropriate pastoral care should be available for all patients who request it.

Inpatient procedures and guidelines. All aspects of the clinical program will require written and detailed documents and protocols, preferably electronic for ease of access, that cover the entire routine and emergency care of the HSCT patient, as well as the day-to-day running of the program. This should include appropriate documents and protocols for medical and nursing staff.

The junior medical staff will appreciate the availability of a comprehensive handbook covering the relevant aspects of the program.

Regular meetings can ensure the safe and smooth running of the program. A meeting involving all the relevant staff should be held weekly to discuss the soon-to-be-admitted patients, the current inpatients and the recently discharged patients.

Day center and outpatient requirements Day center and outpatient facilities A dedicated day center is an essential requirement for a successful HSCT program.

It provides the important link between the inpatient and the true outpatient. On discharge from the ward, patients will often need to be reviewed on a daily or alternate-daily basis, particularly patients undergoing allogeneic HSCT.

The day center should provide a one-stop service: the patient arrives to be assessed by appropriately trained nursing staff who will facilitate blood collection and venous access device care, arrange medical review as well as provide blood product support and electrolyte replacement.

The appropriate number of recliner chairs, beds and single rooms will depend on the expected volume of patients that will be treated in the day center. Proximity of the inpatient, day patient and outpatient facilities can help foster regular interaction between these somewhat separate but overlapping areas. Acute medical care should be available to the patient on a hour basis via an emergency department that is familiar with the management of HSCT patients and particularly the management of febrile neutropenic patients.

An appropriate outpatient department will be necessary for the follow-up of the patients beyond the acute phase of the HSCT. Day center staff Medical staff The day center is often best served by having junior medical staff based in the area full time.
Understanding and reducing barriers to guideline implementation in clinical practice may improve clinical outcomes. Variation in the use of nutritional therapy in patients undergoing stem cell transplantation, with low adherence overall to current practice guidelines. Specific recommendations regarding the type of food and food handling showed significant variation. Conclusion: This Swiss survey found wide variation in the use of nutritional therapy in patients undergoing stem cell transplantation, with low adherence overall to current practice guidelines. Understanding and reducing barriers to guideline implementation in clinical practice may improve clinical outcomes.
Close collaboration of centers will facilitate future research needed to improve current practice and ensure high quality of treatment. Keywords: Guidelines; Hematopoietic stem cell transplantation; Nutrition; Survey.

Abstract Objective: In , international nutritional societies published practice guidelines on screening and nutritional support for patients undergoing stem cell transplantation. Publication types Multicenter Study. Psychological and supportive care issues in the transplant setting.


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Skip to content. Search for books, journals or webpages All Pages Books Journals. Authors: Jennifer Treleaven A. John Barrett. Paperback ISBN: Imprint: Churchill Livingstone. Published Date: 2nd September Page Count: Free Shipping Free global shipping No minimum order. An up to date guide to best practice in the use of stem cell transplantation, covering current status in the treatment of malignant and non-malignant conditions, practical aspects and problems such as infection and graft versus host disease.

Has a practical, accessible approach with free use of algorithms, list tables. Aimed at the whole transplant team - this is an interdisciplinary field. Illustrated in colour throughout.

About Hematopoietic Stem Cell Transplantation In Clinical Practice Writer

Results: All centers offering allogeneic, and most of the centers offering autologous transplantation, had a malnutrition screening tool, mainly the nutritional risk score NRS method. Only one center does not provide nutritional support. There is wide variation regarding start and stop of nutritional therapy as well as route of delivery, with five centers recommending parenteral nutrition and five centers recommending enteral nutrition as a first step.

Although all centers offering allogeneic transplantation, and approximately every other autologous transplant center, used a neutropenic diet, specific recommendations regarding the type of food and food handling showed significant variation. Conclusion: This Swiss survey found wide variation in the use of nutritional therapy in patients undergoing stem cell transplantation, with low adherence overall to current practice guidelines.

Understanding and reducing barriers to guideline implementation in clinical practice may improve clinical outcomes. Close collaboration of centers will facilitate future research needed to improve current practice and ensure high quality of treatment.


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Free Download Hematopoietic Stem Cell Transplantation In Clinical Practice PDF

Objective: In , international nutritional societies published practice guidelines on screening and nutritional support for patients undergoing stem cell transplantation. Little is known about how these guidelines are implemented in clinical practice. We performed a nationwide survey with the aim of understanding current practice patterns, differences between clinical practice, and international recommendations as well as barriers to the use of nutritional therapy.

We focused on in-house protocols pertaining to malnutrition screening, indications for nutritional support, types of nutritional therapy available and provided, and recommendations regarding neutropenic diets. Results: All centers offering allogeneic, and most of the centers offering autologous transplantation, had a malnutrition screening tool, mainly the nutritional risk score NRS method. Only one center does not provide nutritional support.


Vascular access. High-dose regimens for autologous stem cell transplantation. Myeloablative conditioning regimens for allogeneic transplantation. Reduced-intensity conditioning for allogeneic hematopoietic stem cell transplantation. Transplants from unrelated or mismatched family donors. Management of the older patient.


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