Guidelines for the role of psychological specialists in the assessment of adults undergoing Haematopoietic Stem Cell Transplantation

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1. Scope of guidelines

These guidelines have been developed by a working group within the UK Haematopoietic Stem Cell Transplant (HSCT) Psychological Professionals Special Interest Group. The guidelines are aimed at registered psychological specialists at levels 3 and 4 (as specified in the NICE 2004 criteria), working within Haematopoietic Stem Cell Transplant (HSCT) centres.

At the time of writing this guidance, no published guidelines existed to aid psychological specialists in conducting pre-transplant psychological assessments or screenings. This guidance document provides information and recommendations to facilitate psychological professionals who work as part of multidisciplinary teams (MDT) in HSCT. The guidance aids HSCT centres in the development and implementation of clear pathways, with regards to pre-transplant psychological consultation and support for adults identified as suitable for HSCT.

This guidance does not take a position on whether a patient is or is not medically suitable for HSCT, as it does not fall within the remit of psychological specialists to make this decision. However, a psychological specialist may work to support the patient and MDT with this decision-making process.

The guidance also aims to inform transplant pathways and local commissioning arrangements in relation to psychological assessment and support within this specialist area.

2. Background information and the psychological impact of HSCT

While HSCT for haematological malignancies is a well-established procedure, with continually improving medical outcomes, it is a demanding and complex treatment, which has the potential for a variety of psychological consequences. To describe the evidence base for the pre-transplant assessment guidelines developed here, the psychological sequalae will be summarised, as well as growing evidence of the impact of psychosocial factors on transplant related medical outcomes, to delineate why a psychological assessment pre-transplant is essential.

The challenges of a stem cell transplant are well recognised. The process itself is risky, there is significant transplant-related mortality and morbidity (e.g. Arnaout et al., 2014), and there is a considerable possibility of long-term physical consequences such as chronic graft versus host disease. The treatment is almost always carried out after other medical treatments for the haematological malignancy, involving prior chemotherapy and often radiotherapy, which the individual may not have yet fully recovered from. Side effects of the HSCT can be very challenging, and for those who become very unwell, an Intensive Care Unit admission can be needed, with potential psychological sequalae such as post-traumatic challenges. The individual needs to be admitted to hospital for the transplant, in an isolation room, which can remove them from their normal ways of coping as well as social support – visitation rules vary between centres, but visitor numbers are restricted and usually exclude children. Some people need to travel considerable distances to transplant centres, thereby limiting visitation of family and friends. Isolation and care around infection needs to continue for several months post-transplant, and this can have significant implications for work, social activity and mood, with patients reporting long-term impacts on fatigue and role function (e.g. Hjermstad et al., 2004).

2.1 Impact of HSCT on psychological wellbeing

2.1.1 Mood related impact

As outlined previously, there are many reasons why the transplant admission can be challenging. Unsurprisingly, depression and anxiety can be a common experience of those undergoing the transplant. For example, Prieto et al. (2005) measured mood at multiple time points during the transplant admission; they found anxiety to be highest at admission (23% meeting criteria for probable caseness), subsequently decreasing to 8% at 14 days post admission. Conversely, the proportion of probable cases of depression increased from 11% to 17% during the same time period, which corresponded to a significant worsening in physical health status variables. This pattern of decreasing anxiety but increasing depression has been replicated by others (e.g. Baliousis et al., 2017, Kuba et al., 2017). Anxiety prior to and during the transplant is very understandable, as patients worry about surviving the transplant, how they will respond to the treatment, whether it will be effective, as well as the wider impact of admission and treatment, for example, concerns about the impact on family members. Post-transplant, anxiety may start to decrease, presumably as concerns about the transplant start to remit. However, evidence suggests that the impact on mood can continue for significant periods of time post-transplant: El-Jawahri et al. (2016), in their prospective study, found the prevalence of depression at 6 months to be 43%. Mosher et al.'s (2009) systematic review described that several studies have documented anxiety and depression amongst patients up to 2 years post-transplant, although this finding is not universal. Overall evidence suggests a proportion of patients (5-40%) experience high levels of anxiety and/or depressive symptoms before, during and after HSCT (Mosher et al., 2009).

2.1.2 Post-traumatic challenges

Linked to findings around psychological distress, there is increasing recognition that the transplant admission should be considered as a potentially traumatising experience, and steps taken to mitigate this where possible. Traumatic responses and post-traumatic stress disorder (PTSD) can occur after a HSCT: survivors may experience intrusive memories of noxious treatments, distressing side effects and fear of relapse and death. El-Jawahri et al. (2016) found 29% of HSCT recipients had PTSD at 6 months, and that occurrence of PTSD was predicted by depression scores during transplant. It is therefore fair to suggest that managing depression and QOL deterioration during admission may improve QOL at 6 months and reduce the risk of PTSD. In the El-Jawahri et al. participant sample, married patients were less likely to develop PTSD; however, age, gender, occurrence of GvHD did not have a significant effect. In another review, Mosher et al. (2009) found that the incidence of PTSD following HSCT ranged from 5 to 19%, which they suggested was comparable to those of cancer patients whose treatment did not include HSCT.

2.1.3 Post-traumatic growth

Despite the evidence of psychological difficulties linked to HSCT, there is also evidence for post-traumatic growth following the transplant. In a large sample of people ranging between 1.8 to 22.6 years post-transplant, Andrykowski et al. (2005) demonstrated a higher rate of post-traumatic growth for HSCT survivors compared to a matched healthy comparison group, even though the HSCT survivors reported poorer quality of life in all examined domains. This is consistent with literature from other areas of oncology, where improved interpersonal relationships, enhanced appreciation for life, reordered life priorities, increased empathy and deepened spirituality have all been reported following treatment. This supports psychological models of adjustment and adaptation (e.g. Brennan, 2001), which see adjustment to cancer as a psychosocial transition that incorporates adaptation and adjustment as well as potential for psychological difficulty.

2.1.4 Neurocognitive changes

Cognitive impairment can be common in patients before they even undergo HSCT (Smith et al., 2021). Neurocognitive changes continue to be commonly described post HSCT; for example, one study documented cognitive difficulties in up to 60% of people 22-82 months post HSCT (Harder et al., 2002). Cognitive changes can include difficulties with attention, memory, processing speed, co-ordination and executive function (see Buchbinder et al., 2018). Problems can be persistent and may impact other areas of recovery for example, capacity to maintain good adherence or ability to return to work (e.g. Mayo et al., 2020). It is also worth noting that cognitive difficulties can be correlated with mood, fatigue, and sleep difficulties (Ghazikhanian et al., 2017). Supporting patients psychologically with these areas may also benefit cognition (Kelly et al., 2021).

2.1.5 Fertility and sexual function

Fertility and sexual function are important areas of impact. Data indicate that 25% of autologous and over 60% of allogenic transplants are carried out on those aged less than 40 years, with a resultant impact on fertility. Despite this, fertility related concerns, and the subsequent impact of this on psychological wellbeing, have received relatively little attention.

The negative impact on sexual function is, for some, one of the most problematic and persistent areas of concern following HSCT, and one which often has a significant impact on mood and psychological functioning. As well as physical and hormonal changes, concerns about body image, mood difficulties, fatigue, worries about disease reoccurrence, or infertility, can all impact intimacy and sexual function. Common difficulties for men include erectile dysfunction and lack of libido. Similarly, women may also experience a reduced libido, as well as vaginal changes including GvHD and dyspareunia. Gjærde at al. (2023) found that 47% of male survivors and 65% of female survivors reported sexual problems post-transplant; 58% of partners also described problems. These concerns also appear to be long-lasting; Syrjala et al. (2021) described male and female HSCT survivors an average of 11.9 years post-transplant reported lower rates of sexual activity and function than comparison norms. In a study by Kim et al. (2020), 62% of HSCT survivors said sexual function had not been discussed with them during transplant, despite evidence that informing patients about the effect of treatment on sexual health increases the chance of achieving satisfactory sexual function following HSCT.

2.2 Impact of psychological distress on health outcomes

In addition to the detrimental impact that psychological distress has on the individual and their loved ones, there is evidence to suggest that transplant-related psychological distress may also be associated with worse health outcomes for the patients.

For example, Prieto et al. (2005, 2006), in their prospective studies, showed that a mood disorder (diagnosed by interview using DSM) was associated with longer length of stay during transplant admission. El-Jawahri et al. (2017) noted that pre-transplant depression was associated with higher risk of acute GvHD, and a similar link was observed between anxiety and increased GvHD (Gregurek et al., 1996). Likewise, pre-transplant depression can predict slower white cell count recovery in the first three weeks after transfusion (McGregor et al., 2012). Increased psychosocial vulnerability using the TERS screening tool was associated with lower overall survival (Sohl et al., 2020), and several authors have demonstrated worse overall survival with mood/psychosocial vulnerability (e.g. Park et al., 2010, Hoodin et al., 2004). This is consistent with the broader cancer literature where psychological factors such as mood, loneliness, stress, social support and optimism have also been found to be likely predictors of cancer progression (Constanzo et al. (2011).

Recently, exploration of biobehavioural factors have postulated several pathways through which psychological states could impact directly on biological processes (see Kelly et al., 2021). Constanzo et al. (2013) describe that, for example, depression could adversely influence immune processes; this is particularly significant in the HSCT population, where the speed and success of immune recovery is directly associated with overall and progression free survival (Porrata & Markovic 2004).

Inflammation also has the potential to play an important role; inflammation is common in the post-transplant period, and for example involved in GvHD. Constanzo et al. (2013) claim that “distress or depression will likely tilt the balance of the internal milieu in a way that would contribute to the initiation and perpetuation of GvHD”. Inflammation can also have a bi-directional impact on mood, appetite, pain sensitivity and sleep. Although the psychoneuroimmunology field in HSCT is still very much developing, it provides several possible mechanisms for relationships shown between psychosocial wellbeing and biological outcomes.

2.2.1 Risk factors for psychological distress and poorer outcomes

One of the most consistent findings is the influence of historical and immediate psychological distress on post-transplant outcome. Lee et al. (2005) showed that pre-transplant distress was highly predictive of distress post-transplant and is a feasible marker to target in screening and intervention programs. Prieto et al. (2005) showed that major depression during admission was predictive of higher mortality at 1 year and 3 years post-transplant, but not at 5 years. Older age and lower functional status were also significant predictors at some of these time points. In the same cohort, risk of psychiatric disorder was predicted by younger age, being female, past psychiatric history, lower functional status and pain.

Consistent with earlier research, Barata et al. (2018) found that patients with poor coping skills (such as avoidance) are more vulnerable to depression, when faced with high symptom burden from HSCT, and that depression negatively impacted problem-solving and coping post-transplant.

In a study designed to evaluate self-regulation theory and the potentially modifiable contributors to depression in the transplant phase, Baliousis et al. (2017) showed negative perceptions of the autologous HSCT (such as how physical symptoms are perceived) were a significant indicator of distress being maintained during the acute phase of the treatment. They suggest that perceptions may be modifiable through discussion and information giving and explored a single session intervention to target such negative belies (Baliousis et al., 2023).

Baliousis et al. (2017) also explored coping styles, a topic that has been explored in HSCT and cancer more generally, with a general consensus that avoidant coping is generally less helpful than active coping. In this study, Baliousis and colleagues found mixed support for this hypothesis, with both active and avoidant coping being associated with more distress during the acute phase of HSCT, perhaps due to the circumstances of the acute HSCT that may "render many coping strategies ineffective or counterproductive". They state that acceptance and mindfulness approaches may be more appropriate, which is consistent with movements in psycho-oncology more generally.

Further potential risk factors have also been identified in the literature. Lower socio-economic status has been associated with poorer psychological and physiological outcomes post HSCT, such as overall survival and treatment related mortality (e.g. Bevans et al., 2017; Baker et al., 2009). Stagno et al. (2008) suggest that those with a history of alcohol or substance misuse disorders are at greater risk of morbidity and mortality due to the medical sequelae, issues of social support, adherence to treatment plans, and impairment of judgment and decision-making. Those with a history of poor adherence to previous medical treatments may also be vulnerable to poorer outcomes, due to the potential difficulty in maintaining the health care behaviours after transplant (see Visintini et al., 2023 for a review). Awareness of these risk factors can allow MDTs and psychological professionals to identify those patients at increased risk of poorer outcomes, provide specialist psychological support at early stages in the transplant process, and tailor psychological interventions accordingly.

2.2.2 Protective factors for psychological distress and poorer outcome

Social support is well recognised in many areas to be protective against psychological distress. Ehrlich et al. (2016) found that high emotional support pre-transplant, based on the presence or absence of at least one close supportive relationship on which patients could depend, predicted longer overall survival following HSCT. A systematic review by Beatie et al. (2013), examined six papers exploring social support and survival post HSCT; five of the six showed an association between better social support and survival, but recognised the significant methodological difficulties, including the definition and measurements of support.

Personal traits like resilience and optimism are also likely to be important. In qualitative interviews with those undergoing allogenic transplant (conducted during admission and again within the first 100 days post-transplant), a range of positive psychological constructs were frequently expressed including gratitude, determination and optimism/hope (Amonoo et al., 2019). There is some evidence that such attributes not only mitigate against negative emotional states like anxiety and depression, but may independently contribute to improved outcomes such as decreased number of days to engraftment (Knight et al., 2014) and decreased mortality (Lee et al., 2003). While more research is needed in this area, having a good understanding of potential protective factors can help psychological professionals and their MDTs tailor interventions and support during the transplant process.

2.3 Psychological interventions

It is clear from the reviewed evidence that there is significant potential for a HSCT to impact on psychological functioning, and for this in turn to influence physical outcomes in a variety of ways. Without specialist psychological input, psychological difficulties may be under-recognised and under-treated in this population. Psychosocial interventions can help improve physiological outcomes as well as mood and quality of life.

2.3.1 Modifiable risk factors

Clearly, some of the risk factors identified are more modifiable than others. While age, type of transplant/conditioning regime, or previous psychological difficulties cannot be modified, current mood, perception of HSCT and sense of self-efficacy all have the potential to be improved. Evidence exploring the impact of psychological interventions pre/during/post-transplant is still limited. However, research on the importance of psychological support in the general cancer population is well established (NICE, 2004) and findings to date within HSCT show that psychological input can make a significant different to the experience of people undergoing this process. In a meta-analysis investigating psychological interventions for distress in adult patients undergoing HSCT, Baliousis et al. (2016) included nine heterogenous studies with a psychological component (including CBT or active emotional processing), which were provided during and/or after transplant. Results showed a small but significant pooled effect size in favour of interventions, with some benefits being maintained up to a year post transplant.

2.3.2. Benefits of psychological input prior to transplant

The evidence base for the effectiveness of prehabilitation within the area of cancer is growing. A recent review of 20 other reviews of psychological interventions prior to cancer surgery by Grimmett et al. (2022), found a trend towards improved psychological outcomes following intervention, particularly when the interventions were psychologist led. They concluded that providing psychological support early in the cancer pathway and prior to surgery had the potential to improve psychological health and outcomes. They suggest that identifying those patients at risk of poorer outcomes as close to diagnosis as possible and intervening early through prehabilitation programs has the potential to improve psychological health, to prevent longer term psychological morbidity, and to improve treatment outcomes.

The growing evidence base for prehabilitation in cancer care generally suggests that psychological prehabilitation may also be beneficial prior to HSCT. Very few such intervention studies have been developed in HSCT to date and Baliousis et al. (2023) highlight the methodological shortfalls in the studies that have been undertaken. They emphasise that pre-HSCT psychological assessment would provide an important opportunity to identify those that might benefit from psychological prehabilitation and this in turn could help establish an evidence base as to effectiveness of prehabilitation in HSCT. Two recent small-scale studies examining patient perceptions of specialist psychological support in HSCT have added to these findings. An evaluation by Lagerdahl, Svatkova & Dean (2023), examining patient perceptions of psychology led pre-transplant psychological assessments, suggested that these assessments helped patients feel more prepared for the procedure in areas such as coping strategies, resilience, information and security. Love & Dixon (2023) found similar support for the importance of specialist and embedded psychological support in HSCT, which allowed patients to develop strategies and alternate perspectives that helped during their transplant experience.

2.4 Additional considerations

2.4.1 Type of transplant

When considering the evidence on the psychological impact of a HSCT, it is important to acknowledge that the type of transplant a patient undergoes can be an important factor. An allogenic transplant is generally considered riskier, given the possibility of GvHD among other medical factors, and the follow up being more burdensome. However, there is little evidence in the literature to differentiate the psychological impact, with few direct comparisons reported. Of those who have considered this, few differences seem to have been found. In their study of self-reported mood during admission, Prieto et al. (2005) found no significant differences in depression or anxiety between autologous and allogenic groups. This is a potential area for further study, to support with the identification of more vulnerable groups.

2.4.2 Chimeric Antigen Receptor (CAR)-T Therapy

While the guidelines of this document are focused on the pre-transplant psychological assessment of people undergoing HSCT, it is important to note the significant progress that has been made in the management of refractory haematological malignancies with the approval of Chimeric Antigen Receptor (CAR)-T cells for use in routine clinical practice. CAR-T is a complex and advanced cellular therapy, which involves collection and modification of a patients' own immune T-cells, to produce a specific response to target specific malignant cells. As such, it is a bespoke immunological treatment developed for each individual patient. While CAR-T offers improvements on existing therapies, and, most importantly, treatment options where there may previously have been none, it is not without risk and prognostic uncertainty (Brown et al., 2021; June & Sadelain, 2018; Ruark et al., 2020).

Despite all it offers, CAR-T does come with very high overall uncertainty, on-going high risk of relapse/refractory disease and potential side-effects. In particular, CAR-T carries risk of Cytokine Release Syndrome (CRS) and Immune Effector Cell Neurotoxicity Syndrome (ICANS) (Lee et al., 2014; Gajra et al., 2020). These can be serious and even life-threatening but can be managed, though clearly experiencing such symptoms adds to the distress of patients and their families (Barata et al., 2021). This patient group may have had multiple previous treatment experiences involving bad news or traumatic experiences. CAR-T can feel like a last opportunity for treatment, which may impact peoples' decision making and sense of risk, as a decision not to proceed, inevitably means death (Dhawale, TM, 2023).

The use of CAR-T has grown rapidly in services across the UK and with expanding approval for more products and centres gaining licence to deliver these treatments, they will only become more wide-spread. Psychological assessment for CAR-T therapy can follow the same format as documented in these guidelines, with additional consideration given to risks and benefits of CAR-T, as outlined above.

2.4.3 Transplants for non-malignant diseases

Many psychological specialists working in the area of HSCT also offer assessments to people with non-malignant conditions, including sickle cell disease (SCD) or auto-immune conditions like multiple sclerosis (MS). It is equally essential for this group of patients to have the opportunity for a psychological assessment pre-transplant. The risks are similar to in transplants for malignant conditions, and the individual plays an important role in deciding if this is something that they want to pursue, should they be medically eligible. This decision making can be difficult, when weighing up the often very significant impacts on current and future functioning of their disease compared to the risks of a transplant; psychological assessment and support can be a very important part of the pathway. Psychological assessment for non-malignant transplants benefit from the same format as documented in these guidelines, with additional consideration given to the decision making and understanding of potential risks and benefits, as described here.

In MS, an autologous transplant is offered to those meeting specific medical criteria, with the hope of preventing further relapses for a number of years. However, this is a fairly new treatment with limited long-term data. Additionally, the transplant cannot usually undo existing damage, so it is important for the team to ensure the individual understands this, and fully understands the potential risks as well as the benefits.

In SCD, serious side effects such as stroke, although rare, can be a risk. Disease modifying treatments, such as red cell blood exchanges, can be very effective in keeping levels of sickle cells low and therefore reducing risk, but these treatments can be difficult and time consuming, and are not suitable for all. A transplant offers the potential for cure of sickle cell disease; donor cells allow the individual to produce healthy red blood cells (rather than cells that sickle) which usually prevents further crisis and significantly reduces the risk of serious medical events. The transplant would typically be an allogeneic transplant from a fully matched sibling or a haplo-identical donor such as a parent or sibling. This carries the risk of long-term complications, including GvHD, as well as needing a suitable donor. Similarly to MS, the transplant cannot usually undo existing damage from the disease. People with SCD can experience many long-term effects, including chronic pain, fatigue and impact on organs, which can have a considerable impact on function and quality of life. These are often not resolved by a transplant, and it is important to ensure patients recognise and accept this (Dovern et al., 2023). Psychological support may be important after transplant due to the longer-term psychological and physical implications involved. This complexity underlies why decisions regarding transplant are made by multi-disciplinary panels of experts, which specialist psychological professionals are an important part of. The psychological specialist doing these assessments would ideally have some knowledge of both sickle cell disease and stem cell transplantation, and be able to liaise with both teams.

2.4.4 Limitations of current research

It is important to also recognise that while the reviewed research contains consistent themes regarding the psychological impact of a HSCT, many of the authors reviewed here comment on methodological concerns with the data. This includes the heterogeneity of samples, with a variety of different transplant types/conditioning regimes and pre-transplant treatments, which are often not analysed separately. Another major concern is the predominance of white patients in many of the research studies, which limits generalisability to those from non-white or non-English speaking backgrounds. This is clearly a significant consideration, especially when considering concepts like psychological distress and efficacy of interventions where there is significant reason to question the applicability of western models for people of different ethnicities, religious beliefs and cultural backgrounds. We believe that exploring the applicability of these findings to those from non-white and different cultural backgrounds should be a priority for research.

3. Existing guidance on psychological support during the HSCT process

While no guidelines exist for the psychological assessment of people undergoing HSCT, the psycho-social needs of these patients, and recommendations for psychological screening and care, are referred to in a number of general guidelines for HSCT services. Many of these acknowledge the fact that more patients are undergoing and surviving HSCT, whilst at the same time being at risk for developing late complications that can have a serious impact on physical and psychological health, wellbeing, and quality of life. Although some of these guidelines refer to the post-transplant period, they are increasingly focused on the need for psychological assessment and psychological interventions throughout the HSCT pathway, including the period before HSCT admission.

Stem cell transplantation units in the UK are accredited by the Foundation for the Accreditation of Cellular Therapy (FACT) and the Joint Accreditation Committee ISCT Europe (JACIE). FACT-JACIE (2021) have developed international standards for stem cell transplant units, specifying required standards and quality management systems to promote good practice. The standards are on their eighth edition and recommend that psychology and social services staff should be available to the HSCT team to input to pre-transplant patient evaluation, treatment and post-transplant follow-up and care. In addition, the program should have access to psychiatry staff, if needed, during a patient admission for HSCT. The guidelines do not provide further detail of the nature of the pre-transplant evaluation and psychological care that should be provided.

In 2006, generic guidelines for the screening and preventive practices for HCT survivors were published by a group of experts from the Centre for International Blood and Marrow Transplant Research (CIBMTR), the European Group for Blood and Marrow Transplantation (EBMT), and the American Society for Blood and Marrow Transplantation (ACTCT). These guidelines were updated in 2012 and recommended very brief assessment of psychological symptoms of HSCT patients at regular intervals from recovery onwards, as well as the need to explore sexual functioning, family functioning and spousal/caregiver psychological adjustment. They recommended that the presence of psychological symptoms should then trigger in-depth evaluation for depression, to determine the need for pharmacological or psychotherapeutic treatments.

The European Society for Blood and Marrow Transplantation (EBMT) also recommend the need for psychological support throughout the HSCT pathway, including the need for pre-HSCT psycho-social assessment and psychological interventions. The EBMT handbook acknowledges that HSCT is associated with significant physical and psychological morbidity that may have a negative impact on patients', and their relatives', health-related quality of life (HRQoL) (Majhail & Rizzo, 2013). They also highlight that patients and their families can underestimate the risks and challenges of HSCT and life after HSCT, that barriers still exist in discussing psychosocial care in routine care and that there is good evidence to suggest that psycho-oncological interventions are effective. They make a number of recommendations:

- That clinical assessment should take place at regular intervals throughout the procedure for both patients and their family caregiver.

- That thorough psychosocial preparation, alongside medical preparation, is needed in relation to the risks and challenges of HSCT with a focus on possible coping resources.
- That where possible, patients who are in a fairly stable physical state should take advantage of psychological support before admission to inpatient treatment to help with preparation for HSCT.
- That it is important to also consider the needs of related donors and/or any young children of HSCT patients.
- That psychological support should be installed ‘low threshold’ and as far as possible attached to the transplant centre.
- That psycho-oncological interventions should be adapted to patients and family caregivers all along the course of HSCT.
- That psychological interventions could cover different approaches like psychodynamic interviews, introduction to relaxation techniques, communication skills (regarding problem-focused communication with staff and with caregivers) and coping with side effects (pain, nausea, fatigue, restlessness, sleep disorder).
- That alongside regular systematic screening, HSCT team training and an effective MD approach is needed to help address barriers to discussing psychosocial care in routine care.
- That effective interventions should continue to be offered post HSCT.

Macmillan Cancer Support (2017) have argued that prehabilitation should be a routine part of care for anyone with cancer. The review recognises that definitions for prehabilitation vary but that they include an emphasis on pre-emptive preparation to reduce risks and enhance recovery after a stressful event. Macmillan emphasise that prehabilitation is not a stand-alone intervention but an important first stage in the rehabilitation pathway. They suggest a three-stage model of prehabilitation, incorporating pre-assessment, prehabilitation interventions and follow-up post-treatment. The best practice guidelines outlined in this paper fall within the first stage of pre-assessment; however, it is important to see them as one part of the prehabilitation pathway for HSCT patients, which in itself is part of the wider rehabilitation pathway.

In their review, Macmillan identify a number of helpful functions served by pre-assessment:

- to measure the patients’ baseline.
- to identify risk factors.
- to inform the patient and make joint decisions.
- to establish the interventions required to support patients so they achieve the maximum benefit from interventions associated with prehabilitation.
- to gather individual level data on the outcomes of prehabilitation to add to the wider evidence base regarding prehabilitation.

The Macmillan (2017) review suggests that the importance of prehabilitation is being recognised at a national policy level. For example, there is close alignment with the NHS England Long Term Plan’s emphasis on aspects such as personalised care. It also highlights the evidence base for the effectiveness of prehabilitation, more established for non-cancer morbidities but increasingly emerging within cancer care. Most interest has focused on prehabilitation for cancer surgery where patients are being offered physical activity, dietary and psychological support to help prepare for surgery. Macmillan’s review concludes that the evidence base from these interventions suggests that prehabilitation has the potential to increase functional capacity, decrease depression, increase physical fitness, improve quality of life, reduce length of hospital stay and reduce complications.

In 2019, Anthony Nolan, a UK charity specialising in HSCT, published their ‘Pathway for Post-Transplant Care’. They recommend that, as well as pre-transplant assessment of physical health, transplant centres should provide pre-transplant assessment of overall well-being and mental health. Anthony Nolan advise that this assessment should typically include a Holistic Needs Assessment (HNA), and consider social support, family issues and pre-existing mental health conditions. Anthony Nolan also highlight the importance of assessments being done in good time before the person’s transplant, to allow any issues that are identified to be acted upon. They further suggest that patients undergoing HSCT, like those preparing for cancer surgery, should be offered physical activity, dietary and psychological support and this should be tailored to their needs to enhance recovery and as directed by the results of their pre-transplant assessments.

Although there is increasing recognition in published guidelines for the need for pre-HSCT psychological assessment as part of the wider prehabilitation pathway, the existing guidelines do not give specific recommendations about the nature of this assessment and which professionals should undertake it. Therefore, approaches to this vary significantly. For example, Amonoo et al. (2019) conducted a survey of HSCT centres in the US and found significant variation in the content of the evaluation and that they were completed by a range of professionals including psychiatrists, social workers and psychologists. They go onto identify a range of factors they feel should be included in pre-assessment for HSCT:

- A detailed review of oncological, medical, psychiatric and family psychiatric history to provide insight into patients’ risk for psychiatric disorders either in relation to or irrespective of HSCT status.
- Risk factors such as substance abuse history and neuropsychiatric limitations (e.g., memory problems) that could interfere with the required follow-up needed after HSCT and overall treatment compliance including medications.
- Comprehensive evaluation of patients’ expectations and social supports to understand potential psychosocial barriers to good coping as HSCT patients can be away, and a long distance from, their supportive communities for an extended period of time.
- Screening for common psychiatric symptoms (e.g. depressive symptoms, anxiety symptoms, PTSD symptoms and sleep problems) because of the negative impact of psychiatric disorders on recovery.

Amonoo et al. (2019) highlight the importance of communicating identified psychological risk factors to the HSCT team, alongside recommendations for mitigating and managing these risk factors during the HSCT process and the recovery. For example, consideration of medication or therapy for patients with pre-morbid depression who are known to be at risk of worsening psychological distress during the HSCT process. Effective treatment of psychological challenges in the HSCT population results in improved outcomes.

4. Benefits of specialist psychological assessment for patients undergoing HSCT

Although the need for pre-HSCT psychological assessment is recognised in the aforementioned HSCT guidelines, there are presently no good practice guidelines to aid psychological specialists in this role. Drawing on the evidence presented in this document, as well as the clinical experience of the HSCT psychological professionals involved in developing this guidance, it is believed that early and formalised involvement of psychological specialist within HSCT service can have a range of benefits:

- Help assess levels of psychological distress and provide psychological support as appropriate, to prevent the negative impact of this during and after the HSCT.
- Help identify and mitigate potential psychological risk factors at early points.
- Ensure the patient has a clear understanding of the HSCT process and ensure misconceptions, ambivalence or lack of understanding is addressed early in the process with timely interventions.
- Provide increased understanding around psychological factors, that will aid the MDT and ward staff in their communication and support offered to patients.
- Address potential health inequalities and how to adequately support these.
- Ensure realistic expectations of post-transplant recovery.
- Ensure the patient sees psychological care as an integrated part of the HSCT MDT, understands the role of psychological professionals in the transplant process.
- Reduce potential barriers for accessing psychological care at a later date.

5. Good practice recommendations for the pre-transplant psychological assessment

5.1 Pre-assessment

These guidelines recommend that all transplant centres should have access to a psychological specialist. This specialist should ideally be embedded within the stem-cell transplant team. Where this is not possible, the psychological specialist should work within the wider psycho-oncology service and have specialist knowledge and experience of working with people undergoing HSCT. All prospective transplant patients should be offered a pre-transplant psychological consultation as a routine part of the transplant pathway.

5.2 The referral process

5.2.1 Timing of the referral

A consultation with a psychological specialist is most beneficial if carried out once the patient has received information from the wider transplant team about the transplant process, and associated risks and benefits. At the earliest, this should be following the first consultation where stem cell transplantation is discussed as the next step in the patient’s treatment pathway.

The timing of the referral to the psychological specialist may vary across transplant centres, dependent on staffing and capacity. There may be occasions when a timely referral for psychological assessment may be impeded by aggressive disease or any other instance in which a patient must undergo a transplant urgently. In such instances, a referral to psychological specialists should still be made at the earliest opportunity.

5.2.2 Explaining the purpose of the assessment

The pre-transplant psychological assessment should be introduced as an opportunity to discuss issues relating to the HSCT, such as pre-transplant anxiety, the potential psychological challenges of the HSCT, as well as psychological coping during the transplant process.

Referrers should communicate that the psychological pre-transplant consultation is an opportunity for the patient to explore and consider their feelings, expectations and preparedness for the HSCT, and discuss any psychological or emotional distress pertaining to transplant or their illness. The pre-transplant psychological assessment should be presented to patients as a routine part of their care, provided by the transplant centre, so as to normalise this and minimise any anxiety the patient or caregiver may have about psychology or other mental health professions. It should also be made clear to patients that the purpose of the psychological assessment is to identify and support patients and families with any psychological needs, and that it is not intended to prevent someone from being offered the transplant.

If the patient declines a referral to a psychological specialist, their consultant or transplant coordinator should explore reasons for this. In most cases, declining a psychological assessment should not affect the decision to offer a transplant to a patient. However, if patients continue to decline the psychological assessment, the treating team should discuss this with the psychological professional(s) in the team and formulate a plan to identify and support the patient psychosocially. This may take the form of indirect support from the psychological specialist via another member of the transplant team the patient already knows.

In cases where there are known factors or patterns of behaviours that may interfere with the patient's ability to engage with the treatment team, or to tolerate or comply with the treatment, the treatment team should recommend that the patient attends the pre-transplant psychological assessment as a necessary part of their treatment plan. Such factors may include mental health difficulties, risk factors and psychosocial stressors.

5.3 The pre-transplant assessment

The psychological assessment may consist of mix of a qualitative semi-structured interview, standardised questionnaires to assess psychological distress and quality of life measures (see section 5.3.2 for further details on standardised questionnaires and measures). The assessment should be suitably adapted to accommodate patient's individual needs which may include language barriers or disabilities.

At the start of the pre-transplant psychological assessment, it is important that the psychological specialist explains the aims of the consultation, and parameters of confidentiality such as with whom, and how, any notes from the assessment will be shared.

5.3.1 Content of the assessment

The assessment should aim to cover the areas listed below, where appropriate and indicated. For some of the areas listed, the psychological professional will need to use their discretion and existing knowledge about a patient, or information disclosed during the assessment, to decide whether the area requires exploration:

Coping with illness and treatment to date

- Experience of and adjustment to diagnosis.
- How any previous treatments were tolerated, both physically and psychologically, as well as adherence to treatment.
- Prior experience of inpatient admissions and previous medical history.
- Coping style and preferred coping strategies that have helped before.

Relationship to healthcare teams

- Trust and confidence in the healthcare team.
- Satisfaction with communication between self and treating team.
- Preferences on how much information the patient/caregiver wants to know about the transplantation process.

Thoughts, feelings, concerns, expectations about the transplant

- Patient's understanding of the process, including risks and benefits involved, both short-term and long-term.
- Anticipated challenges and difficulties.
- Mood and anxiety at time of assessment (self-rated or using standardised psychometric questionnaire)
- Optimism or hopefulness about the treatment.
- Understanding of the treatment and what it will involve during the acute inpatient phase, as well as the long-term recovery phase.
- If relevant, recognition of and feelings towards potential impact of the treatment on fertility (male and female) and hormonal change including menopausal symptoms.
- Preparation for being in hospital: Specific concerns about this from a psychological perspective, consideration of how they intend to keep themselves occupied and stay connected to people or activities that matter to them, and sleep or food related difficulties and needs (past and present).

Mental health, trauma, and substance use history

- History of any previous mental health difficulties that were significant and/or required specialist interventions through talking therapies and/or medication.
- History of traumatic life events that continue to affect psychological wellbeing/ could be exacerbated by planned treatment.
- Substance use history, including addictions.
- Other significant experiences in the past and their resources/coping strategies.

Social support

- Who is in the patient's support network.
- The support network's awareness of and understanding of the transplant and what it entails.
- Information about any dependants (children or adults) and their coping.

- Patient's perception of the level of social support they will have throughout the treatment process.

Social stressors

- Any difficulties with finances or housing.
- Impact of illness and treatment on ability to work/study.

Equality, diversity and inclusion issues

- Exploration of any disabilities, learning difficulties, neurodiversity and any adaptations that need to be made to optimise care.
- Language barriers.
- Experiences of marginalisation, discrimination, or other oppression that may have affected experiences with healthcare or engagement with treatment previously.

Safeguarding or risk issues

- Risk of harm to self through suicide or self-harm (past history and current).
- Risk of harm to others (e.g. previous history of violence towards others, particularly healthcare staff).
- Safety and wellbeing of any vulnerable adults or children impacted by the patient's illness or treatment (including care arrangements for children under 18 during the patient's hospital admission).

5.3.2 Standardised questionnaires and measures

In addition to the qualitative, semi-structured interview, which tends to form the main part of the pre-transplant assessment, the psychological specialist may also consider the use of standardised questionnaires and measures to inform the overall assessment. Although many questionnaires and measures have been used to evaluate psychological distress, social support and coping styles in people undergoing HSCT, there is no universal agreement about which measures should be used for the pre-transplant assessment. It would arguably be very difficult to assess the nuance and breadth of the areas of potential impact by self-report measure alone. However, based on the experience of the authors of this document, the following tools may be helpful to consider in conjunction with the clinical interview:

The Transplant Evaluation Rating Scale (TERS) uses clinical interviews to score 10 domains, to give an overall score which is weighted based on predictive value. The Psychosocial Assessment of Candidates for transplantation (PACT), again based on clinical interview, uses Likert scales in 10 domains to generate an overall score.

Standardised tools for depression or anxiety such as Patient Health Questionnaire (PHQ9), Generalised Anxiety Disorder (GAD7) scale or Hospital Anxiety and Depression Scale (HADS) may be utilised. Similarly, quality of life measures such as the Functional Assessment of Cancer Therapy-Bone Marrow Transplant Scale (FACT-BMT) and the Patient-Reported Outcomes Measurement Information System (PROMIS) may also be useful. Interpretation of scores should take into account the overlap between symptoms of depression and effects of illness or treatment.

5.4 After the Pre-Transplant Psychological Assessment

5.4.1 Recording and sharing the findings from the psychological assessment

Information from the assessment should be recorded and shared with the transplant MDT and other relevant clinicians through the standardised methods agreed for each individual transplant team (e.g. a written report, detailed medical notes and/or MDT discussion) *prior to the transplant hospital admission* and with the patient's consent. The report or notes should be written keeping in mind the aims and purpose of the assessment, and will include a summary of the consultation, any potential concerns identified, and recommendations discussed. Recommendations may include a follow-up psychological appointment; further discussion with the medical team about the risks and benefits of the transplant; or a review of psychotropic medication. Any recommendations that may benefit the treating medical, nursing, or AHP teams to optimise the patient's care should be shared with relevant colleagues within the transplant centre and the referring centre (if these differ).

5.4.2 Further support and psychological input

Psychological interventions may be indicated after the consultation and assessment. For example, some patients may need preparatory psychological work to proceed with HSCT. A plan for this will be arranged with the patient accordingly, either as outpatient appointments prior to admission, or as inpatient appointments during transplant admission. The Transplant MDT will be kept updated with the progress of this work, as needed, and in line with confidentiality and local hospital policies. Alternative forms of support or advice may also be indicated after the consultation and the patient will be referred, or signposted, to other services or charities as appropriate.

If additional support is not needed after the consultation, it is important that the patient and their caregiver understand how they can access this support at any stage of the transplant pathway. Psychological distress can occur at any time post-transplant and late-effects may include significant adjustment difficulties and mental health conditions, such as depression and post-traumatic stress disorder. Given the impact of physical status on psychological wellbeing, patients at increased risk of complications, or experiencing more severe medical issues, are more likely to need psychological support. Pathways for psychological support should be clear to all members of the Transplant MDT, including hospital ward staff, to allow referral of transplant patients (with their consent) for specialist psychological assessment and intervention at any point if needed.

Following a transplant, it is recommended that all patients receive regular monitoring of their overall wellbeing and mental health, via a Holistic Needs Assessment, at 6 months, 1 year and at least annually thereafter, with onward referral to specialist psychological support if required (A Pathway for Post-Transplant Care – Anthony Nolan, 2019).

6. Summary and concluding remarks

Pre-transplant psychological assessment is an essential part of the preparation for HSCT and should be embedded into pre-transplant pathways. It can help identify psychological difficulties, which may impact a person's ability to engage with the transplant process and on-going treatments. Timely identification of problems allows for intervention in a planned and supportive pathway, to help prepare patients and their families for the challenge of transplant. Pre-transplant psychological assessment benefits the MDT and helps all staff share a common approach to support patients.

These guidelines aim to recommend a best practice structure for pre-transplant psychological assessments, and to advise as to the role of the psychological specialist within the pathway for patients considering undergoing HSCT. Although the guidelines are aimed at those working with adult patients, they also apply to the treatment of patients over the age of 16 years, who may undergo treatment in adult transplant centres.

The guidelines do not take a position on whether a patient is or is not medically suitable for HSCT and do not see this as the remit or role of psychological practitioners. They recognise the complexity of decision making about whether to go ahead with HSCT, not least because it is an intensive treatment procedure well known to carry significant risks of mortality, morbidity and long-term negative implications for quality of life. At the same time, HSCT offers options and hope for patients who, without HSCT, may have few or no other treatment options. The guidelines can facilitate psychological specialists in supporting complex decision-making alongside patients and the MDT; however, the main purpose of pre-transplant psychological assessments is to identify patients' psychosocial support needs and offer integrated psychological care as part of the transplant pathway.

The guidelines do not attempt to address the specialist needs of patients with specific learning or communication needs, or the needs of children and adolescents. Psychological professionals consulting this guidance are advised to always consider this document alongside relevant policy, legislation, emerging research and clinical experience.

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