**Introduction**

Allogeneic hematopoietic cell transplantation (HCT) is often associated with poor oral intake and as a result, nutritional status declines. Although it might seem obvious that optimal nutrition is likely to improve outcomes of transplantation, there are no clinical data that directly support this assumption. It is also unclear whether artificial nutrition support (ANS) should be provided as enteral tube feeding (ETF) or parenteral nutrition (PN).

**Methods**

A retrospective analysis of 100 day non-relapse mortality (NRM) and incidence of acute GvHD according to route and adequacy of nutrition, together with other known prognostic factors, after allogeneic HCT in a single centre between 2000 and 2014. Nutritional intake was reviewed from admission to engraftment and deemed inadequate where an unmet need for ANS was documented. Exclusion criteria were age < 16 years, non-hematological malignancy, cord blood or haplo transplant. Myeloablatiing conditioning was used in 285 (59%) patients, 272 of whom received a TBI based regimen. Reduced intensity conditioning was given to 199 (41%) patients. For the 236 (49%) unrelated donor cell recipients in vivo T-cell depletion with alemtuzumab was used.

**Results**

ANS was initiated in 228 (47%) of patients who met predefined criteria shown in figure 1. Myeloablative HCT recipients were advised to have an enteral feeding tube inserted prophylactically at day 1 post HCT. If ETF could not be established then PN was given. 198 (41%) of subjects never met the criteria for artificial nutrition and maintained an adequate oral intake. A further 47 (10%) of subjects required ETF for a median of 12 days to achieve adequate enteral nutrition. There were 148 subjects that required 4 or more days of PN to achieve adequate nutrition. 127 subjects required PN for a median of 17 days and 21 required a median of 16 days PN plus 8 days ETF. Episodes of ANS shorter than 4 days were excluded as likely inappropriate or ineffective.

**Conclusion**

Adequate nutrition during allogeneic HCT is associated with improved 100 day NRM. Adequate EN is associated with significantly better results for this outcome than adequate PN. Furthermore adequate EN, predominantly via oral intake may be associated with lower incidence of acute GvHD when compared to PN, perhaps because of its ability to maintain gut mucosal integrity and the gastrointestinal tract environment, including microflora. The significant associations reported here warrant further research into optimizing enteral nutrition in recipients of HCT.