Establishing a HPN Discharge Pathway

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&

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**Intestinal Failure Team**  
**Salford Royal NHS Foundation Trust**

- First centre in the UK and Europe for treatment of complex IF patients.

- The Intestinal Failure Unit (IFU) is a 21 bedded specialist unit and cares for 283 HPN patients

- Unit provides parenteral nutrition and HPN training to patients with IF referred from hospitals throughout the UK and beyond.

- First centre designated by NHSE to develop surgical techniques for autologous gastrointestinal reconstruction and lengthening (AuGIR)

- Leading centre for fistuloclysis and distal feeding in the UK.
The Christie NHS Foundation Trust

- The Christie is one of Europe’s leading Cancer Centres

- Serves 3.2 million people across Greater Manchester and Cheshire,

- 193 inpatient beds and includes an 8 bedded critical care unit, haematology transplant unit and a teenage cancer unit.

- Treatments - radiotherapy, chemotherapy, specialist surgery, critical care, stem cell transplants, palliative care, endocrinology and clinical trials.
Aims

• To identify indications for PN in the oncology setting

• To explore considerations for starting PN in oncology patients

• To share HPN pathway with a case study
Indications for PN in oncology patients

• Patients who are malnourished or facing a period longer than one week of starvation and enteral nutritional support is not feasible, PN is recommended (Grade C).

• Severe mucositis or severe radiation enteritis (Grade C).

• Perioperative PN is recommended in malnourished candidates for artificial nutrition, when EN is not possible, (Grade A).

• In HSCT patients PN should be reserved for those with severe mucositis, ileus, or intractable vomiting (Grade B).

Indications for PN in oncology patients

• In intestinal failure, long-term PN should be offered, if:
  • enteral nutrition is insufficient
  • expected survival due to tumour progression is longer than 2–3 months
  • it is expected that PN can stabilize or improve performance status and quality of life,
  • the patient desires this mode of nutritional support (Grade C)

• In incurable cancer patients HPN may be recommended in hypophagic/(sub)obstructed patients (if there is an acceptable performance status) if they are expected to die from starvation/under nutrition prior to tumour spread

Not Indicated

- Peri-operative PN should not be used in well-nourished cancer patients (Grade A).
- The routine use of PN during chemotherapy, radiotherapy or combined therapy is not recommended (Grade A).
- PN is not recommended if oral/enteral nutrient intake is adequate (Grade A)

Advanced cancer

**Nutrition support (strong)**

Offer and implement nutritional interventions in patients with advanced ca only after considering together with the patient the prognosis of the disease and both expected benefit on QOL and potentially survival as well as the burden associated with nutritional care. \(^1\)

- With refractory cachexia the burden of PN may outweigh the benefits \(^2\)

- Patients with advanced disease and chronic intestinal failure, PN may prolong QOL and survival \(^3\)

- More prospective studies are required to show if HPN improves QOL or survival in patients with Malignant bowel obstruction \(^4\)

- Few studies to support the benefits in advanced cancer

2. EPCRC, 2010
Considerations for Palliative PN

- Assess each patient on an individual basis
- MDT approach with patient and family
- Benefit of nutrition support in advanced cancer should be considered carefully taking into account all aspects on an individual basis:
  - Prognosis,
  - Benefits of anti cancer treatment
  - Co-morbidities (e.g. dementia)
  - Nutritional status
  - Potential effect of nutritional therapy
  - Risks, burdens v benefits of artificial nutrition
  - Cachexia
  - Wishes and expectations of patients and relatives
  - Set goals of care and review
PN may not improve nutritional status BUT benefits can be in terms of quality of life and increased life expectancy

- Improved wellbeing
- Better energy levels.
- Personal goals or ambitions
- Time with loved ones
- Attendance at specific event
- Making necessary preparations, putting affairs into order
BIFA statement: home parenteral nutrition (HPN) for patients with advanced malignancy (2017)

• The British Artificial Nutrition Survey (BANS) 2014/15 report of adult HPN in the UK, showed that ‘malignancy’ as the underlying diagnosis had risen and accounted for approximately one in 4 new HPN registrations.

• Extremely difficult to predict the length of survival and QOL

• May be benefits in providing PN to patients with a shorter prognosis but with a good performance status.

Patients classified into 3 palliative groups:

`P1` IF

- Expected short survival (<12 weeks)
- Good performance status and low inflammatory markers
- Incl. young pts with rapidly growing tumours
- E.g. bowel obstruction due to metastatic or locally advanced cancer
- Priority is rapid discharge home.
BIFA statement: home parenteral nutrition (HPN) for patients with advanced malignancy (2017)

‘P2’ IF
• Require HPN during ongoing oncological treatment – e.g. chemotherapy or debulking surgery.
• P2 state will regress to P1 if treatment ineffective or to P3 if the tumour is very slow growing.
• Pts often metabolically unstable (e.g. due to fluid balance, renal or hepatic impairment)
• May require more intensive monitoring and modification of their PN scripts.

‘P3’ IF
• Patients usually with slow growing tumours e.g. ovarian cancer, neuro-endocrine tumours
• May survive a long time, often several years, with nutritional support.
Intestinal Failure Service Review

• NHSE review of severe IF (SIF) service provision across England.
  Out to public consultation currently until end of Oct ’18

• NHSE proposing 2 types of centre for SIF:
  • Integrated IF centres (medical and surgical interventions)
  • HPN centres (medical support)

• Networked model of care
• Raise standards of clinical quality
• Webinar on Thursday 27th September 4-5pm
  https://wwwengage.england.nhs.ukconsultation/severe-intestinal-failure-services-for-adults/
Intestinal Failure Service Review

- Change to current service specification to include palliative PN:
  - Service will accept patients with advanced malignancy who have IF and need PN support.
  - To be accepted for PN, life expectancy will be anticipated to exceed 3 months.
  - Pts to primarily come under care of an oncologist or palliative care team, as well as their GP.
  - The IF service will only be responsible (clinically and financially) for the management of IF.
  - The Integrated IF or Home PN Centre will be responsible for the decision to commence (or continue) and to terminate PN, in discussion with the relevant MDT cancer team.
Christie HPN Discharges

• More patients are requiring to be discharged home on HPN due to a non-functioning gastrointestinal tract or bowel obstruction due to disease.

• Up to 2012 there was an average of 5-6/year discharged home.

• In 2016, 29 patients were referred to Salford Intestinal Failure Unit (IFU) for HPN, with 21 being discharged home

• **383% increase in HPN referrals over last 4 years**
Retrospective audit on the discharge process for HPN

- 6 patients during 2013
- Looked at the whole discharge process
Findings of Audit

• Delays 1-28 days for referral to be sent
• Patient self discharged due to confusion over the referral being OP not remote
• Poor patient experience
• Impact on LOS
• Lack of coordination from Christie
• Poor communication between both hospitals
• Lack of info for Salford – poor fluid balance, lack of bloods
• No funding from commissioners
• No clear pathway
Collaborative Working 2015-17

- Set up regular meetings look at challenges both sides

- Review the pathway
  - Weekly calls about patients
  - Send the PN prescription to help process bloods and fluid balance

- Coordinator for HPN – nutrition nurse

- SLA – funding, KPI’S

- HPN readmissions
Any patient for HPN must be referred to the IFU @ Salford Royal NHS Foundation Trust

- IFU referral form must be fully completed and returned with a typed covering letter
  Fax a copy of current TPN prescription: PAV: Mrs A Trevelyan/Angela Page
  Email: trevelyan@srfh.nhs.uk angela.page@srfh.nhs.uk
  Fax: 0161 206 4890

Christie Pharmacist to communicate with SRFT pharmacist re previous regimen: Gavin Leashy
  Pager: 076132 629792
  Email: gavin.leashy@srfh.nhs.uk

- Christie team to complete referral
  - A Page/T McBride Tel: 0161 206 3164/3116

SRFT team to assess patient:
  - Either OPD
  - Onward by HCC nurses
  - Transfer if in-patient assessment is required

Remote discharge

SRFT admin:
1) Find a suitable HCC
2) Liaise with HCC to arrange CVC care/Training (patients, relative, HCC, D/n) according to SRFT protocol
3) Arrange TPN prescription with HCC

SRFT medical:
1) Review fluid balance chart and up-to-date bloods
2) If CVC already in place, review CIV for up position
3) Assess on-going PN
4) Make F/S for PN
5) Written communication to referring team at the stage of F/S with detailed plan

Christie team:
1) Provide details of a contact person who coordinates discharge planning
2) Provide accurate and up-to-date fluid balance, blood results, PN script, all other relevant medical details, including CVR
3) Allow access of HCC to patient in Christie
4) Ensure single lumen IV central access dedicated for PN only
5) Arrange all palliative care
6) Keep SRFT team up-to-date about any changes in the circumstances of the patient plan

MCC:
1) Review patient @ Christie
2) Ensure patient details (demographics etc.) are correct
3) Provide information to SRFT regarding possibility of remote discharge
4) Assess feasibility of HPN under the individual circumstances

Following discharge home/hospice or alternative appropriate place, the patient will be monitored regarding the HPN under the SRFT team:
- OPD
- Or @ patient’s bedside via the HCC nurses
  Christie team remains the main clinical carer for the patient and the ongoing care of the primary diagnosis as well as the palliative management will be coordinated from Christie's

All Christie/SRFT correspondence/clinic letters will be copied to both teams to ensure continuity of care.
Remote discharge pathway

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IFU referral form must be fully completed and returned with a typed covering letter
Fax a copy of current TPN prescription:
FAO: Miss A Teubner/Angela Page
antje.teubner@sft.nhs.uk angela.page@sft.nhs.uk
Fax: 0161 206 4690

Christie Pharmacist to communicate with SRFT pharmacist re previous regimens:
Gavin Leahy
Pager: 07623 620792
Email: gavin.leahy@sft.nhs.uk

Christie team check referral has been received:
A Page/ McBrude Tel: 0161 206 5364/5115

SRFT team to assess patient
- Either OPD
- On the ward by HCC nurses
- Transfer if in-patient assessment is required

OPD/admission
SRFT team will make arrangements accordingly
Remote discharge pathway

**Remote discharge**

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Annual Christie referrals

Referrals received:
- CL: 28.7
- UCL
- LCL
IFU waiting list

Days on waiting list
Christie remote pathway

Date

Days on waiting list
Remote discharges waiting list to final script

Days

Date of final script

UCL

CL

21.1

8.6

3.6
Outcomes at 31st August 2018

- 10 (11%) patients remain on HPN at 31st August 2018
  - mean 584.5 days, max 2185 days.

- 70 (74%) patients received HPN for 14 days or more before end of life.
  - Mean 144.3 days, max 1715 days.

- 9 (9%) patients received HPN under 14 days before end of life.
  - Mean 5.8 days, max 9 days.

- 4 (4%) Stopped HPN and had CVC removed
  - Mean 574.3 days, max 1147 days.

- 2 (2%) patients had their care transferred to other healthcare provider
  - Mean 163 days, max 250 days.
Case Review
Case study

Mrs N, 53 year old

Diagnosis
- Dec 2017 diffuse large B cell lymphoma.
- Commenced chemotherapy (R-CHOP) January 2018.

Past medical history
- Cholecystectomy 1992
- Hysterectomy 1999
- Asthma/borderline COPD

Family & social history:
- Lives with daughter
- Worked as sales order processor for a company, not currently working due to ill health.
- Quit smoking four years ago, 20 year/pack history.
- Occasional alcohol
History
First admission-Christie

• First admission - Jan 2018 with small abdominal bowel obstruction (SABO) & ascites.
• Referred to dietetics – normal weight 76.9kg, dry weight 64.2kg, 16% weight loss. High risk RFS and malnutrition
• PN commenced via PICC and referred to Salford for HPN
• Chemo, ryles tube for drainage, free fluids
• In and out of SABO
• Commenced onto low fibre liquid diet and supplements
• PICC out – infection, ryles tube out.
• Team decided not for HPN as responded to chemo and managing soft low fibre diet and supplements.
• Discharged home under community dietitian 4 weeks later.
History

2nd Admission

22 2 18 Adm with nausea, vomiting (faecal), abdo distention, had 3 cycles of chemo.
  • evidence of subacute small bowel obstruction (SABO)
  • Ryles tube, IV fluids, sips fluids and referred to dietetics

Dietary assessment:
  • Total 24% weight loss, 57.9kg, BMI 21, evidence of muscle wastage
  • Minimal intake for over week
  • High risk RFS and malnutrition
  • Estimated requirement 1765kcals, 10-12g N
  • Electrolytes: 58-87mmol Na & K (plus losses), 5.8mmol – 8.7 mmol Ca, 5.8 – 12 mmol Mg, 29 – 41 mmol Phosphate, fluid 2030mls

Plan:
  • Commenced on PN via PICC, sips only
  • Refeeding management 10kcals/kg - Pabrinex
  • Monitor FB, Output, bloods, BMs QDS
2\textsuperscript{nd} Admission
26/2/18 – 14/3/18

- Chemotherapy

- Ongoing in and out of SABO,

- Issues with ryles tube blocking

- Conservative management and for venting gastrostomy (VG) if obstruction persisted

- VG discussed – patient wished to wait

- Parenteral nutrition continued, PN bag changed x 2 due to volume due to outputs and changes in absorption

- Trials of NBM / free fluids

- Weight 60.6kg (estimated dry weight 58kg - stable)
The Start of HPN Process

- 15/3/18  Dietitian requested consider HPN

- 19/3/18  Decision for venting gastrostomy
            Decision for HPN and referral sent

- 22/3/18  Salford confirmed HPN installation date and provider.
            For hickman line pre DC

- 26/3/18  Venting gastrostomy inserted,
            PICC removed as infection, declined peripheral PN
            Chemo on hold
HPN Process

• 27/3/18  HCC visit to patient on ward

• 29/3/18  PICC placed, PN, biochem stable, TGs normal

• 3/4/18    Installation date from HCC for 6/4/18
            Training on VG by Nutrition nurse
            Hickman line and chemo before DC
            Planned DC 6/4/18

• 5/4/18    For stage 1-3 low fibre diet with VG and PN continued

• 6/4/18    Fridge delivered, planned for HPN nurses b.d.
            Hickman placed
            New DC date 7/4/18

• 7/4/18    Discharged  Weight = 55.85kg
            PN and low fibre liquidised diet (stage 1-3)

Total days from referral to discharge = 15 working days, 1 day delay due to line change
Referral received by SRFT

- 19th March 2018 - referral received, accepted and pt placed on waiting list
  - Fluid balance, blood results, clinical events reviewed
- Reason for referral: recurrent SBO
- Double lumen PICC in situ
  - (due to be changed to Hickman)
- PN script on discharge: 12gN, 1600kcal 1.7L
- Pt required homecare nurses to connect/disconnect
- Final script formulated and pt removed from waiting list 22/3/18
HPN clinic-assessment

• Seen in clinic 24th July 2018
  • Delay due to further admissions to Christie

• Weight 63.7kg BMI 23.8
  • 2.1kg increase (3.4%)

• MAMC 25.4cm (50th-75th centiles)
HPN clinic-assessment

• Variable, but overall much improved appetite
• Keeps own food and fluid balance charts
• 3 regular meals, plus snacks
• No vomiting and BO daily (previously obstructed)
• Venting gastrostomy draining <1L/d

• Aim:
  • Improve QOL
  • Meet nutritional requirements using the most appropriate route.
Clinoleic fat (olive oil 80%, soybean oil 20%) reacted to SMOF (30% soybean oil, 30% MCT, 25% olive oil, 15% fish oils)

Energy (non-N): 1800kcal
- N: 12g
- Na: 180mmol
- K: 60mmol
- PO4: 22mmol
- Mg: 8mmol
- Ca: 4mmol

Volume: 1750ml

Plus
- vitlipid N (fat soluble vitamins) 10ml
- solivito N (water soluble vitamins) 10ml
Quality of Life

- Reliant on home care nurses to connect and disconnect daily (2hr time window)
- Multiple hospital appointments (outpt f/up, scans etc)
- Chemotherapy appointments
- Reports no QOL
- Had been declining some PN connections in previous 2 weeks
Outcome

• PN reduced to 4 nights
  • Safety net as chemo continues

• Encouraged with oral intake, regular HE/HP meals/snacks

• F/up in HPN clinic -8 weeks

• If oral intake continues and absence of obstructive symptoms persists then look to reduce further and stop
Outcome

• End of August 2018 contact from Consultant Oncologist, Christie
  • Pt E&D well
  • Wt increased
  • Pt wishes to stop PN

• PN stopped remotely

• Review in HPN clinic as planned

• CVC to remain in situ
Summary

- Working collaboratively between 2 specialist services has improved:
  - Patient pathway
  - LOS
  - Patient experience
  - Standardised care
  - Improved patient safety
  - Enable to look at research in this patient group.
References


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Thank you

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