T.P.N.S. - TEST TO PRESCRIBE NUTRITION SAFELY!

EMMA MURRAY

20TH NOVEMBER 2018
MY BACKGROUND

Intestinal failure

Nutrition Support Team
BACKGROUND
AIM

• TO PREVENT COMPLICATIONS, 90% OF ADULT INPATIENTS ON PARENTERAL NUTRITION IN LEVEL 2 IN BCH WILL HAVE APPROPRIATE BIOCHEMICAL MONITORING* BY DECEMBER 2017.

* SEE TPN MONITORING TABLE
TEAM MEMBERS

TPNS TEAM

Senior Doctors
- Dr Turner
- Dr Rafferty
- Dr Loughrey

Nutrition Nurses
- Emma
- Ruth, Kara and Breege
- Other nutrition nurses

Dietitians
- Maeve
- Other dietitians

Foundation doctors
- Bromwyn

Ward staff
90% of adult inpatients on parenteral nutrition in Level 2 in BCH will have appropriate biochemical monitoring by December 2017.

AIM

PRIMAR Y DRIVERS

- Model appropriate monitoring
- Simplify monitoring process
- Educate staff

CHANGE IDEAS

- Agree weekly monitoring scheme
- Scheme on TPN regimen/notes
- Monitoring stamp/sticker for notes
- Simplify Cyberlab ordering page
- Ward nutrition “whiteboards”
- Teaching sessions for nursing/medical staff
- TPN induction sheet for FY1/2
- Nutrition Team page on Trust Hub page with eLearning
DATA COLLECTION

Nutrition team record all bloods for each TPN patient (for WR)

Nutrition Nurses record whether bloods appropriate

Emma updates run chart

Display on Nutrition whiteboards on wards
Management of Parenteral Nutrition

Nutrition Nurse
May 2017

Staff Education

Review paperwork provided
## NICE guidelines for TPN laboratory monitoring

<table>
<thead>
<tr>
<th>Test</th>
<th>Baseline</th>
<th>Follow-up Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium, potassium, urea, creatinine</td>
<td>Baseline</td>
<td>Daily until stable, then 1 or 2 times a week</td>
</tr>
<tr>
<td>Glucose</td>
<td>Baseline</td>
<td>1 or 2 times a day (or more if needed) until stable, then weekly</td>
</tr>
<tr>
<td>Magnesium, phosphate</td>
<td>Baseline</td>
<td>Daily if risk of refeeding syndrome, three times a week until stable, then weekly</td>
</tr>
<tr>
<td>Liver function tests including International Normalised Ratio (INR)</td>
<td>Baseline</td>
<td>Twice weekly until stable, then weekly</td>
</tr>
<tr>
<td>Calcium, albumin</td>
<td>Baseline</td>
<td>Then weekly</td>
</tr>
<tr>
<td>C-reactive protein</td>
<td>Baseline</td>
<td>Then 2 or 3 times a week until stable</td>
</tr>
<tr>
<td>Zinc, copper</td>
<td>Baseline</td>
<td>Then every 2–4 weeks, depending on results</td>
</tr>
<tr>
<td>Full blood count and MCV</td>
<td>Baseline</td>
<td>1 or 2 times a week until stable, then weekly</td>
</tr>
<tr>
<td>Iron, ferritin</td>
<td>Baseline</td>
<td>Then every 3–6 months</td>
</tr>
<tr>
<td>Folate, B12</td>
<td>Baseline</td>
<td>Then every 2–4 weeks</td>
</tr>
</tbody>
</table>
LABORATORY MONITORING FOR TPN INPATIENTS

<table>
<thead>
<tr>
<th>Test</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td><strong>TPN PROFILE</strong></td>
<td><strong>Daily until stable</strong></td>
</tr>
<tr>
<td>(FBC, U+E; BPR; Mg, LFTS, CRP)</td>
<td>Alternate day bloods until weaned</td>
</tr>
<tr>
<td><strong>Capillary blood glucose (bedside testing)</strong></td>
<td><strong>4hrly for first 48hrs;</strong></td>
</tr>
<tr>
<td></td>
<td>Once daily until weaned (if stable)**</td>
</tr>
<tr>
<td><strong>Micronutrient testing</strong></td>
<td><strong>Only if requested by NST.</strong></td>
</tr>
</tbody>
</table>

- *Stable*: Patients should be on full rate for at least 48 hrs, with normal biochemistry for at least 48 hrs.
- **May need to refer to endocrinology if high CBGs.**
- Patients may require more frequent bloods if at significant risk of refeeding (6-12hrly – please review NST notes) or due to clinical condition.
CYBERLAB – WHICH TEST TO ORDER?

Routine
TRN profile

Nutrition profile
TPN
AMENDED SCREEN
PERCENTAGE OF PATIENTS ON TPN WITH APPROPRIATE BIOCHEMICAL MONITORING IN LEVEL 2, BCH

- F1 changeover
- Modified monitoring table
- Cyberlab amended
- Extended baseline median
- Teaching sessions
- Teaching/cyberlab reminder
- 13th August 2018
STRIDING FORWARD...

- Departmental induction for foundation doctors
- Scottish Quality and Safety Fellowship – Cohort 11
- TPNS moves to EMSU

Stop TPN, Test and Treat On Pyrexia
CONCLUSIONS

This project demonstrates that quality improvement models can be used to improve monitoring for inpatients on parenteral nutrition.

We aim to implement and spread our change ideas to ensure adequate monitoring in other wards/hospitals.

We plan to use QI tools for other PN and IF related projects in the future.