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### 1. Background and Rationale

- Bleomycin, Etoposide, Cisplatin (BEP) administered as 4 x 3-weekly cycles is standard first-line treatment for patients with metastatic germ cell tumours (GCT) with poor prognostic features.
- High-dose chemotherapy and more complex regimens (e.g. VIP, T-BEP) have failed to improve cure rates and are more toxic.
- Accelerating regimens of standard chemotherapy to 2-weekly rather than 3-weekly improved cure rates in other malignancies.
- Results from an Australian single-arm phase I/II trial<sup>1,2</sup> and a UK trial<sup>3</sup> confirmed that accelerating standard chemotherapy for germ cell tumours is safe, feasible, and active: The 5-year PFS was 94% and 50%, and 5-year OS was 94% and 92%, for intermediate and poor prognosis patients, respectively<sup>2</sup>.

### 2. Aim

To determine if accelerated BEP is superior to standard BEP as first-line chemotherapy for intermediate and poor-risk metastatic germ cell tumours.

### 3. Study Design

#### Design:

Open-label, randomized, stratified, 2-arm, 2-stage multi-center, phase 3 clinical trial.

#### Target Population:

Participants aged 11 – 50 years, with intermediate or poor-risk metastatic germ cell tumours for first line chemotherapy.

#### Sample Size:

150 (stage I) and 500 (stage II) patients gives >80% power at 5% level of significance to detect a 21% improvement in response rate from 59% with standard BEP to 80% with accelerated BEP (stage I), and 7% absolute improvement in 2yr PFS from 81% with standard BEP to 88% with accelerated BEP (stage II), respectively.

### 4. Study Objectives

#### Primary:

Progression free survival

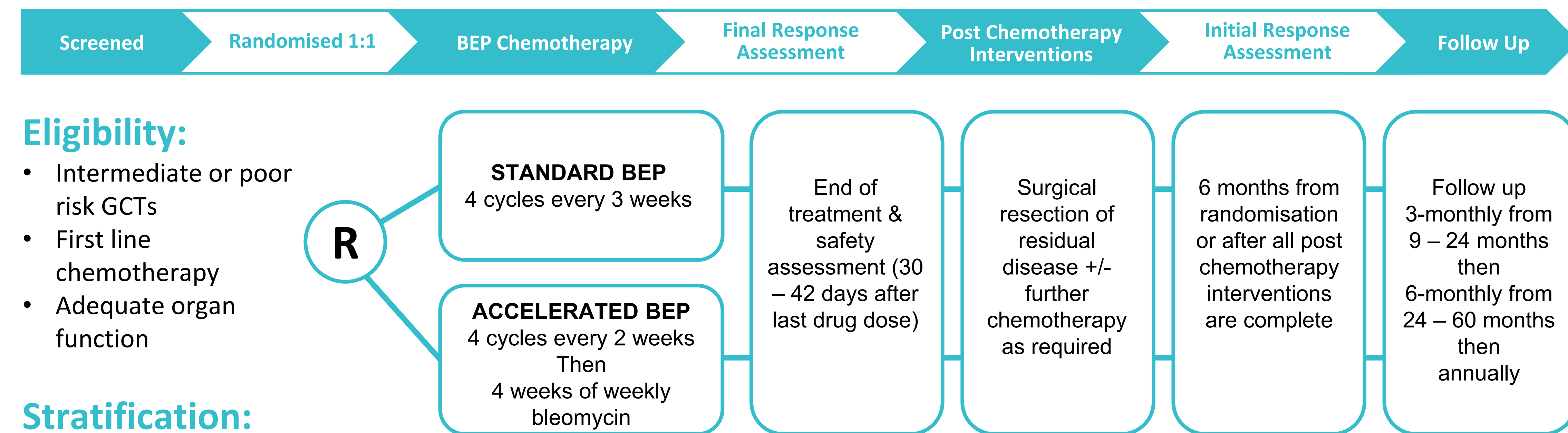
#### Secondary:

- Response following treatment completion
- Adverse events
- Health related quality of life
- Treatment preference
- Delivered dose intensity of chemotherapy
- Overall survival

#### Tertiary:

Correlative biomarker studies including microRNA.

### 5. Study Schema



#### Eligibility:

- Intermediate or poor risk GCTs
- First line chemotherapy
- Adequate organ function

#### Stratification:

- IGCCC risk group
- Primary site
- Brain metastases
- Induction chemotherapy
- Age
- ECOG status
- Gender
- Study site

#### BEP doses:

- Etoposide (E) 100mg/m<sup>2</sup> D1-5
- cisplatin (P) 20mg/m<sup>2</sup> D1-5
- Peg G-CSF D6 or Filgrastim daily
- Bleomycin (B) 30000 IU IV weekly (age ≥ 16 years) or
- Bleomycin (B) 15000 IU /m<sup>2</sup> (age < 16 years)

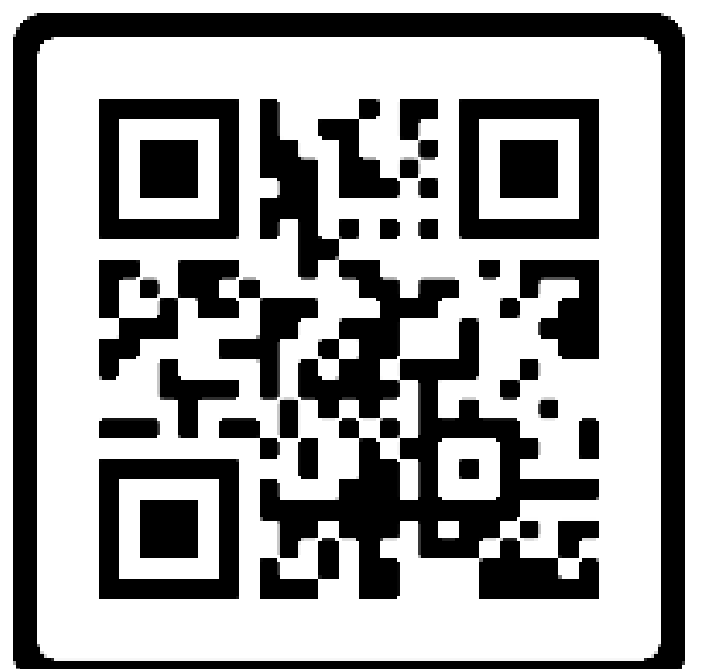
Week	1	2	3	4	5	6	7	8	9	10	11	12
<b>Standard BEP (21-day cycle)</b>	EP B	B	B	EP B	B	B	EP B	B	B	EP B	B	B
<b>Accelerated BEP (14-day cycle)</b>	EP B	B	EP B	B	EP B	B	EP B	B	B	B	B	B

### 6. Study Progress

<b>Enrolment opened</b>	Feb 2014
<b>Sites open to recruitment (207)</b>	ANZ 24 UK 18 USA 165
<b>Patients recruited</b>	N=345
<b>Interim analysis (N=76)</b>	Safety acceptable
<b>Stage I analysis (N=150) Including formal comparison of response rate</b>	Activity acceptable
<b>Stage II analysis (N=500)</b>	Expected in 2029

### 7. Contact Us

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- [www.anzup.org.au](http://www.anzup.org.au)
- [@ANZUPtrials](https://twitter.com/ANZUPtrials)
- #P3BEP



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#### Clinical trial identifiers:

NCT02582697, ACTRN12613000496718

#### Acknowledgments:

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#### References:

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