**Interferon alpha-2b (IntronA®) for Myeloproliferative Neoplasms**

**Indication:**
Patients with Essential thrombocythaemia, Polycythaemia vera, Myelofibrosis at high risk of thrombosis and intolerant of hydroxycarbamide.

It is the only treatment used in pregnancy.

**Treatment intent:**
To normalise blood count

**Regimen details:**
Interferon alpha–2b 3 million IU SC 2 – 3 times per week

Increase dose by 3 million IU per week every fortnight, according to toxicity.

Formulation available – IntronA® (interferon alfa-2b). This is an unlicensed indication.

IntronA® is available as the following multi-dose pre-filled pens:

<table>
<thead>
<tr>
<th>Pen size</th>
<th>Dose range deliverable per dose</th>
<th>Number of doses available per pen</th>
</tr>
</thead>
<tbody>
<tr>
<td>IntronA 18 million IU</td>
<td>1.5 to 6 million IU</td>
<td>12 doses of 1.5 million IU</td>
</tr>
<tr>
<td>IntronA 30 million IU</td>
<td>2.5 to 10 million IU</td>
<td>12 doses of 2.5 million IU</td>
</tr>
<tr>
<td>IntronA 60 million IU</td>
<td>5 to 20 million IU</td>
<td>12 doses of 5 million IU</td>
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</tbody>
</table>

Each pen is intended for a maximum four-week use period and must then be discarded. A new injection needle must be used for each dose. After each use, the injection needle must be discarded safely and the pen must be returned immediately to the refrigerator. A maximum of 48 hours (two days) of exposure to 25°C is permitted over the four-week use period to cover accidental delays in returning the pen to the refrigerator.

Once a patient is stabilised on therapy, do not change to another brand of interferon-alpha.

**Administration:**
SC injection

**Premedication:**
Paracetamol 1000mg 30 minutes prior to the first 3 doses.

**Frequency:**
Continuous

**Extravasation:**
Not applicable

**Anti-emetics:**
Not usually required

**Supportive medication:**
Allopurinol 100-300 mg OD (dependent on renal function) at initiation until platelets <400 x 10⁹/L and PCV < 0.45.
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Regular investigations:
FBC Monthly initially, then at the discretion of the prescriber
Renal profile Baseline. Recalculate GFR using the Cockcroft & Gault equation if >25% change in serum creatinine from baseline
Liver Profile Twice yearly
Thyroid function tests Twice yearly

Dose Modifications

Haematological Toxicity Titrte dose against desired effect and any undesirable pancytopenias

Renal Impairment Interferon-alfa is metabolised primarily in the kidney.

<table>
<thead>
<tr>
<th>Creatinine Clearance</th>
<th>Dose modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 – 50 ml/min</td>
<td>No dose modification necessary</td>
</tr>
<tr>
<td>10 – 20ml / min</td>
<td>No dose modification necessary</td>
</tr>
<tr>
<td>&lt; 10ml / min</td>
<td>Use with great caution</td>
</tr>
</tbody>
</table>

Hepatic Impairment No adjustment required

Toxicities: Care should be taken in the elderly who may be more susceptible to toxicity.

The most common adverse effect is a flu-like syndrome consisting of fever, chills, fatigue, myalgias, anorexia and headache. These effects are transient, dose-related and reversible within 72 hours of cessation of treatment. Paracetamol 1000 mg given 30 minutes before administration of interferon and every 6 hours after alleviates the flu-like symptoms.

CNS effects, particularly depression, suicidal ideation and attempted suicide have been observed in some patients during IntronA therapy, and even after treatment discontinuation mainly during the 6-month follow-up period. Patients should be closely monitored for any signs or symptoms of psychiatric disorders. If psychiatric symptoms persist or worsen, or suicidal ideation is identified, it is recommended that treatment with IntronA be discontinued, and the patient followed, with psychiatric intervention as appropriate.

Drug interactions: Severe granulocytopenia can develop if ACE inhibitors and interferon are given concurrently, monitor use carefully.
Interferon alfa inhibits the metabolism of theophylline, monitor theophylline levels
Interferon alfa may enhance the effects of nicoumalone or warfarin, monitor for effect.