Beyond the first 48 hrs, a second patient scoring is done by organs (Haematopoietic, Gastrointestinal, Cutaneous, Neurovascular) according to the METREPOL document for therapeutical management and Multiple Organ Failure (MOF) prediction.

Cytokines

Score I: Monitoring. No cytokine
- Outpatient clinical monitoring.
- Blood count day 1 - 2 and then once a week for 2 months.

Score II: Cytokines (curative)
- G-CSF (Pegylated or not) should be used within 48 hrs or as soon as possible until neutrophil recovery (ANC > 0.5 x 10^9/L). EPO and TPO agonists can be used if needed. Routine marrow failure support with antibiotics, blood products as per routine haematology-care.
- Symptomatic treatment of gastrointestinal damage.
- If severe aplasia → Protected environment.
- Accidental radiation exposure is generally heterogeneous. Some under-exposed/protected regions of bone marrow can give rise to endogenous haematopoietic recovery.

Score III: Cytokines (until reappraisal of score)
- Patients to be treated as score II until it is clear that they are score III.
- Palliative and end of Life care to be initiated.
- Re-evaluation of score during the first week based on laboratory or clinical symptoms revealing irreversible organ damage or MOF.

ALL BLOOD PRODUCTS SHOULD BE IRRADIATED.

SEVERE RADIATION SKIN LESIONS HAVE A PECULIAR EVOLUTION. CONSIDER MESENCHYMAL STEM CELLS AT SPECIALIST CENTRES.

References:
THE FIRST 48 HOURS

Decontamination after stabilisation.
Life-threatening wounds and burns should be treated first.
Radiation dose review comes later – Irradiation is not contamination – An irradiated person is not a source of radiation.

Acute Radiation Injury

The severity of prodromal clinical features is indicative of probable significant injury.
- Extensive and immediate erythema.
- Early Transient Incapacitation Syndrome (temporary loss of consciousness).
- High fever.
- Hypotension; Early Vomiting.
- Immediate diarrhoea.

Accident Characterisation

- Inquiry: circumstances of the accident (is irradiation +/-contamination present; use contamination monitoring device), source characteristics, source-victim geometry, duration of exposure, shielding, homogeneous / heterogeneous irradiation.
- Labelling and storage of personal belongings and clothes, biological material (hair, nails).

Urgent sampling

- Blood cell counts (+ differentials) every 4-8 hours for the 1st 24 hours, 12-24 h every day after.
- Red cell group typing
- Standard biochemistry + amylasemia.
- Urine and faeces if radionuclide contamination is suspected
- Store serum and cells or DNA for further analyses including HLA typing.
- Chromosome aberrations on blood lymphocytes (biodosimetry) (15 ml + heparin). Seek advice from national / international biodosimetry networks as soon as possible.

Primary scoring

Record all clinical symptoms on a date and hour-stamped chart

<table>
<thead>
<tr>
<th>Score I</th>
<th>Score II</th>
<th>Score III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average delay before symptoms appear</td>
<td>Less than 12 hours</td>
<td>Less than 5 hours</td>
</tr>
<tr>
<td>Cutaneous erythema</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Asthenia / Weakness</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Nausea</td>
<td>*</td>
<td>+++</td>
</tr>
<tr>
<td>Vomiting per 24 hrs</td>
<td>Maximum 1</td>
<td>1 to 10</td>
</tr>
<tr>
<td>Diarrhoea / Number of stools per 20 hrs</td>
<td>Maximum 2 - 3, bulky</td>
<td>2 - 3, soft</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>Minimal</td>
<td>Intense</td>
</tr>
<tr>
<td>Headaches</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Temperature</td>
<td>Below 38°C</td>
<td>38 - 40°C</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Normal</td>
<td>Normal - Possible temporary decrease</td>
</tr>
<tr>
<td>Temporary loss of consciousness</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Depletion of blood lymphocytes

- Outpatient monitoring
  - Above 1 500 / μL
  - At 24 hours
  - Above 1 500 / μL
  - At 48 hours
- Hospitalisation for curative treatment
  - Below 500 / μL
  - Below 500 / μL
  - Below 100 / μL

WARNING: the symptoms and values indicated above are reliable only in case the whole body or large parts of the body have been externally exposed to a high radiation dose delivered within few minutes or few hours. Fill and fax EBMT MED A to: (+33)1 71 97 04 88
To download EBMT MED A: www.ebmt.org in Data-Management/Registry structure/data collection forms & manuals