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<th>Bronchiolitis obliterans with organising pneumonia (BOOP) following allogeneic bone marrow transplant - a common pulmonary complication following BMT?</th>
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Gancyclovir for adenovirus infection
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We report a 47 year old man who presented with severe haemorrhagic cystitis 49 days after a sibling
allogeneic bone marrow transplant (BMT) for acute myeloid leukaemia (AML) in early 2nd relapse. The
symptoms consisted of gross haematuria, urinary frequency of up to 20 times a day, and severe dysuria.
Rapid virus culture of the urine was positive for adenovirus and electron microscopy also showed the
presence of BK-polyoma virus. After one week of hydration and empirical antibiotics no improvement
of symptoms was achieved and the urine remained positive for both viruses. At this stage spin cytology
of the urine also revealed cells with intranuclear inclusions in keeping with viral cystitis. Because of
experimental in-vitro evidence of adenovirus inhibition by Gancyclovir, the patient’s Gancyclovir dose
was increased from 5mg/Kg once three times a week, which he was on for CMV prophylaxis, to
5mg/Kg twice daily. Although the urine was still positive for adenovirus and polyoma virus 2 days
after the commencement of full dose Gancyclovir, the patient’s symptoms improved rapidly. After two
weeks of treatment his symptoms became minimal and repeat viral culture became negative for
adenovirus, even though polyoma virus remained detectable.

Although haemorrhagic cystitis following BMT is usually caused by BK-polyoma virus reactivation and
is normally self-limiting, the symptoms in this patient only started to improve significantly after full
dose Gancyclovir was commenced. Furthermore, the resolution of symptoms coincided with the
disappearance of the adenovirus from detection. That the polyoma virus persisted after resolution of
the cystitis suggests that in this case, the adenovirus was the main culprit of the cystitis.

This is the first reported case of adenovirus induced haemorrhagic cystitis successfully treated with
therapeutic doses of Gancyclovir.

Bronchiolitis obliterans organising pneumonia (BOOP) following allogeneic bone marrow
transplant- a common pulmonary complication following BMT?
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Pulmonary disease remains a major cause of transplant related morbidity and mortality. At least 39% of
Transplant Related Death (TRD) are reported to be due to lung disease. Pulmonary complications appear
both in the immediate and late post BMT period. These are usually of infective origin. However, a large
number of pulmonary disease following BMT are labeled as idopathic or interstitial pneumonitis. 20% of
these are of non-infective origin. Bronchiolitis obliterans organising pneumonia (BOOP) was diagnosed in a
28 year old man 1 year after a one antigen mismatch sibling donor bone marrow transplant for chronic
phase chronic myeloid leukaemia (CML). He presented with a 2 week history of increasing breathlessness
and cough. We failed to identify an infective cause, and pulmonary function tests were not typical of
bronchiolitis obliterans of chronic GVHD. CXR showed multiple patchy opacities in the peripheral and
basal zones of both lungs. The pulmonary function tests showed a restrictive pattern with reduced diffusion,
and the diagnosis was histologically confirmed after an open lung biopsy. The patient was treated with high
dose steroids (1mg/Kg) and after 6 months of treatment his symptoms resolved completely although some
residual consolidation remained. Formal pulmonary function tests normalised except for some residual
decrease in diffusion.

The aetiology of this syndrome is not clear but is characterised by a good response to steroids which leads
in most cases to complete resolution. Although, as far as we know, this is the first reported case of adult
BOOP associated with BMT, the condition is probably much more common and may account for a
significant part of the 20% of non infective pneumonitis following BMT. It is therefore important that this
syndrome is promptly diagnosed, as treatment for this is different to that for infective pneumonitis and
unless it is promptly treated with steroids it can become rapidly fatal.