BONUS Newsletter

BRITISH ONCOLOGY NETWORK FOR UNDERGRADUATE SOCIETIES

The Junior Oncologist

Issue 2

Hello from the BONUS committee

Welcome to the second issue of the BONUS newsletter! We are excited to share all the brilliant work BONUS has been doing this year, as well as looking forward to all the amazing events coming up.

BONUS is a national network of medical students and doctors interested in oncology. We host career and speciality based events in order to get more people involved in oncology. We also collaborate with medical schools across the U.K.

This year our events have covered a wide range of topics, from exam revision days, to what a career in oncology is really like. A particular highlight was our annual BONUS conference, which explored some of the ethical challenges faced in oncology.

A big thank you to all our members and to everyone who has contributed in some way to BONUS this year, we couldn't do it without you! If you have an idea or would like us to share an oncology event or opportunity please get in touch.

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BONUS wrapped 2025

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Education: Acute Lymphoblastic Leukaemia, a brief overview

Acute Lymphoblastic Leukaemia (ALL) is a malignant disorder characterised by the proliferation of immature lymphoid precursor cells. ALL has been identified as the most common childhood cancer but can occur in adults as well, where it is associated with worse health outcomes. In the UK, ALL accounts for approximately 80% of childhood cancers with peak incidence between 2 to 5 years of age. However, survival has improved significantly with recent advancements in diagnosis, risk stratification and management.

In a nutshell, lymphoid progenitor cells, namely B-cell and T-cell, undergo malignant transformation and proliferate giving rise to ALL. The B-cell subtype of ALL is more common (approximately 75%). The Philadelphia chromosome subgroup of ALL, a high-risk subgroup, has become more treatable with the introduction of tyrosine kinase inhibitors (eg: imatinib) in management plans. Different risk factors have been identified such as age of patient, viruses and specific syndromes.

Presentation: Bone marrow failure can lead to pancytopenia which can manifest as fatigue (low RBC count), recurrent infections (low WBCs), bleeding and bruising (low platelets).
Other features: Hepatosplenomegaly, lymphadenopathy, headaches, bone pain, testicular swelling, fever.

Investigations: Initial investigations can include Full Blood Count and peripheral blood film. Definite diagnosis is via a bone marrow biopsy. Subtypes can be identified by using immunophenotyping. Central nervous system involvement can be identified by conducting a lumbar puncture.

Management: Chemotherapy is often the mainstay of management with induction, consolidation and maintenance regimens. Allogenic stem cell transplantation is conducted in select cases. However, recent advances in early identification and targeted therapies present a possibility for improved outcomes in patients with ALL.

About the author: Hi! I'm Andrew Kevin Aloysius, a 4th year Medical student from the University of Lancashire. I'm extremely passionate about Oncology and hope to pursue a career in Medical Oncology. My primary areas of interest within oncology are leukaemias, lung cancer, breast cancer and chemotherapy.

Test your knowledge: ALL quiz

1: As per WHO guidance, what biopsy finding is diagnostic of ALL?

a) <5% lymphoblasts
b) >10% myeloblasts
c) >10% lymphoblasts
d) >20% lymphoblasts
e) >20% lymphocytes

2: Which of the following is associated with a worse prognosis in ALL?

a) Age below 50
b) White blood cell count at diagnosis of <30,000
c) ETV6-RUNX1 fusion
d) BCR-ABL1
e) Fast response to initial treatment

3: Why is central nervous system prophylaxis part of treatment?

a) Blast cells can originate in the CNS
b) The CNS acts as a sanctuary site for tumour cells
c) CNS cells are more susceptible to chemotherapy
d) If tumour cells are seen in the CNS on imaging
e) To reduce overall treatment time

4: Tumour lysis syndrome can occur when starting treatment, what abnormalities would you expect to see on the bloods?

a) Hypocalcaemia, hyperuricaemia, hyperphosphataemia
b) Hypercalcaemia, hypouricaemia, hypokalaemia
c) Hyperkalaemia with hyponatremia
d) Hyperkalaemia
e) Hypercalcaemia and hyperkalaemia

5: What prophylaxis can be given to prevent tumour lysis syndrome?

a) Calcium supplements
b) Antibiotics
c) Giving chemotherapy more slowly
d) Diuretics
e) Allopurinol

Answers at the end of the newsletter!

Stem cell transplants in ALL

One treatment option in acute lymphoblastic leukaemia, as well as in other cancers, is a stem cell transplant. Read on to learn more about this and how the Anthony Nolan trust helps make this happen.

What: A stem cell transplant
This is most commonly an allogenic transplant, which means a transplant from a donor of the same species.

Who: Stem cell transplant might be used in the following patients:
1) Those at higher risk of relapse.
2) Those who have relapsed
3) In patients with disease refractory to other treatments

How: Stem cells can be collected from the blood or bone marrow. Cells collected from the blood as used for a stem cell transplant, whereas if cells are collected from the bone marrow this is termed a bone marrow transplant. You can read more about the process by clicking here.

HLA typing is an important part of stem cell transplant. Human leukocyte antigens are proteins on the surface of cells which allow the body to differentiate between self and non-self. Ensuring a close match between donor and recipient reduces the risk of complications and graft rejection.

Prior to transplant patients are usually treated with chemotherapy or radiotherapy with the goal of eradicating malignant cells. Healthy cells produced from the transplanted donor cells eventually replace malignant cells.

ANTHONY NOLAN

Saving lives through stem cells

The Anthony Nolan charity was set up by Shirley Nolan. Her son, Anthony, had a rare blood disorder which could only be treated with a bone marrow transplant. Unfortunately no match was found for Anthony, leading to his death aged just 7. The charity works to build a worldwide network of donors, to ensure better access to stem cell treatment.

If you'd like to sign up to become a stem cell donor you can click here to find out more.

BONUS blog posts

Don't miss these blog posts from the BONUS community! Click the picture next to the title to read.

Elective in Oncology: Sir Anthony Mamo Oncology Centre, Malta

Written by Sarah Lewis, 5th year medical student

ESMO: Medical Oncology course for medical students - Valencia, Spain

Written by Wafia Sadik, 5th year medical student

A Summer with LACOG: Addressing Cancer Inequalities

Written by Jack Atherton, FY1 doctor.

My Neuro-oncology Elective at The Walton Centre, Liverpool – Summer 2024

Written by Sherin Mubarak, 4th year medical student.

Upcoming events in 2026

BONUS network: What is interventional oncology?
19th of January 2026, 7pm
Discover the wonders of interventional oncology with Dr Yeung!

Thoracic Oncology Frontiers Conference 2026
21st of January 2026, 7pm
An international multidisciplinary event bridging translational science & clinical medicine across thoracic cancers.

RCR Radreach: Building confidence and overcoming barriers
27th of February 2026, 9:30am-5pm
FREE and open to final year medical students and foundation year doctors from a widening participation background with an interest in clinical oncology and radiology and RadReach mentees.

Your Future in Clinical Oncology - Northwest Radiotherapy Network
11th of March 2026, 6pm
Thinking about a career in clinical oncology? Discover the pathway, the possibilities and the people shaping the future of cancer care.

Click here to RSVP on our website and to find new events!

Submit an event or blog post:

Events:

Blog posts:

Quiz answers

1: Option d - More than 20% lymphoblasts need to be seen in bone marrow biopsy to confirm ALL. Remember lymphocytes are normal healthy cells!

2: Option d - BCR-ABL1 is also known as the "Philadelphia chromosome" and is associated with poorer prognosis. Age <50, espcially between 1-10 years; ETV6-RUNX1 fusion; WCC <30,000 and a faster response to treaqtment are all associated with better prognosis.

3: Option b - Systemic chemotherapy can miss tumour cells "hiding" in the CNS, so intrathecal chemotherapy can be used to ensure these cells are killed and to prevent relapse.

4: Option b - In tumour lysis syndrome you would see hypocalcaemia, hyperuricaemia and hyperphosphataemia due to rapid cell breakdown meaning these leak into the circulation.

5: Option e - Allopurinol reduces uric acid formation, additionally IV fluids can be given to help renal clearance.

References

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Diagnosis, prognostic factors, and assessment of ALL in adults: 2024 ELN recommendations from a European expert panel. Gökbuget et al. *Blood* 2024; 143 (19): 1891–1902.

Do you have an idea for the next BONUS newsletter? Contact us via email at bonus.oncology@gmail.com or use the contact form on our website here!