

WHAT ARE PAEDIATRIC CANCERS



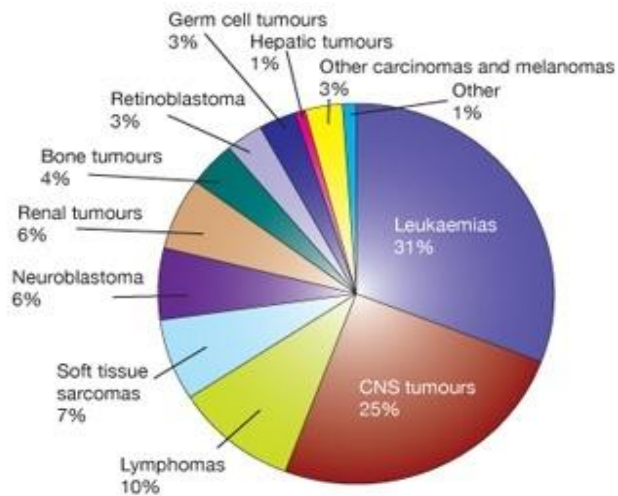
INTRODUCTION

- Childhood cancers are RARE
- 0.5% of all cancers in the West
- Overall risk that a child will develop cancer during first 15 years of life is 1 in 450 and 1 in 600



INTRODUCTION

- Leukaemia is the commonest childhood cancer 30%
- Brain tumours 25%
- Lymphomas 10%
- Solid tumours
 - Neuroblastoma 7%
 - Wilms tumour and renal syndromes
 - Bone tumours 4%
 - Rhabdomyosarcomas 3%



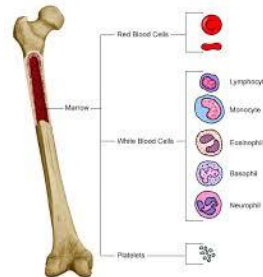
GENERAL PRINCIPLES OF CANCER TREATMENT IN CHILDREN

- Biopsy/definitive diagnosis prior to initiation of therapy
- Use of immunophenotyping and cytogenetics
- Staging
- Local therapy
 - Surgery
 - Radiotherapy
 - Chemotherapy
- Systemic chemotherapy
 - Leukaemia
 - BMT



LEUKAEMIA: SIGNS AND SYMPTOMS

- Bone marrow infiltration
 - Anaemia with pallor, lethargy, dyspnoea
 - Low platelets with bleeding, bruising, petechiae
 - Neutropenia with fevers and infection
 - Bone pain with limp and irritability



LEUKAEMIA SIGNS AND SYMPTOMS

- Extramedullary spread
 - Lymphadenopathy
 - Hepatosplenomegaly
 - Dyspnoea, cough (mediastinal mass)
 - Testicular enlargement
 - Gingival hyperplasia
 - Fever of malignancy



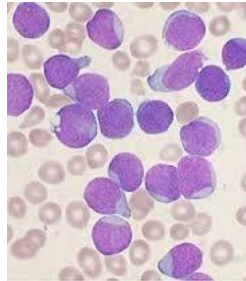
LEUKAEMIA:PROGNOSIS

- Initial white cell count is most significant (WBC>1,000 has poor prognosis)
- Children < 1 yr and >10yrs have worse outcome
- Girls do better than boys



LEUKAEMIA :DIAGNOSIS

- Peripheral blood smear
- Immunophenotyping and cytogenetics
- Bone marrow analysis
- LP



LEUKAEMIA:TREATMENT

- Intensive multiagent chemotherapy
 - Induction: achieve remission
 - Consolidation/ extramedullary therapy
 - Delayed intensification
 - Maintenance therapy
 - BMT (in certain high risk groups)



BRAIN TUMOURS

- Commonest malignant solid tumour in childhood
- Leading cause of cancer related death <15yrs
- Greatest assoc morbidity



BRAIN TUMOURS


- Dilemma of seeking to improve survival whilst wishing to avoid or diminish toxicity
- Multidisciplinary team required:
 - Specialist doctors
 - Nurses
 - Therapists
 - Psychologists
 - Social care workers
 - educationalists




BRAIN TUMOURS: PRESENTATION AND DIAGNOSIS

- Greatest diagnostic delay of all childhood cancers
- Determinants inc
 - Age
 - Tumour type
 - Anatomical site

Signs include:

- Raised Intracranial Pressure
 - Focal neurological deficit
 - Endocrinopathies
- 

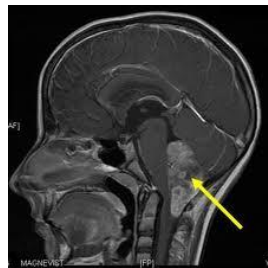
BRAIN TUMOURS: PRESENTATION

- Increased intracranial pressure
 - Loss of developmental milestones
 - Poor school performance
 - Headaches, progressively worsening
 - Vomiting (morning)
 - Papilloedema (late)
 - Double vision
 - Bulging fontanelle
- 



BRAIN TUMOURS: DIAGNOSIS

- Neuro imaging is essential in diagnosing CNS tumours
 - CT widely used initially
 - MRI is usually preferable and superior
- Histological diagnosis where possible



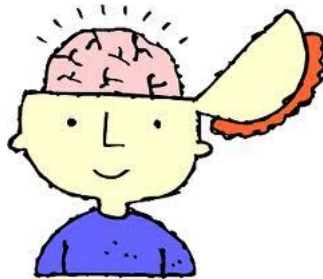
BRAIN TUMOURS

- Astrocytomas - 43%
 - Throughout childhood, no pattern by sex or age
 - 75% low grade
- Embryonal tumours - 19%
 - 75% medulloblastoma
 - Frequently in younger children
- Ependymomas - 10%
 - Highest incidence in 1 year olds



BRAIN TUMOURS: TREATMENT

- Neurosurgery (tumour removal to biopsy)
- Chemotherapy (to shrink pre op or prevent recurrence post op)
- Radiotherapy



LYMPHOMAS

- Cancer of white blood cells called lymphocytes
 - Hodgkin's disease
 - Non-Hodgkin's disease



LYMPHOMAS: SIGNS AND SYMPTOMS

- Non-Hodgkin's lymphoma
 - Predominantly Burkitts and lymphoblastic
 - Peak incidence 7-10 years
 - Males:females 3:1
 - Characterised by extranodal disease
 - Abdomen is commonest primary site
 - Mediastinal tumours
 - Head and neck



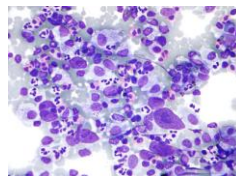
NHL :DIAGNOSIS AND TREATMENT

- Biopsy
- Staging
- Chemotherapy is treatment of choice




HODGKINS LYMPHOMA


- Less common than NHL
- Hodgkin's lymphoma is characterized by the orderly spread of disease from one lymph node group to another
- systemic symptoms with advanced disease.
- When Hodgkins cells are examined microscopically, multinucleated Reed–Sternberg cells (RS cells) are the characteristic histopathologic finding.



HD: PRESENTATION

- Painless cervical lymphadenopathy 80%
 - Mediastinal involvement 60%
 - Constitutional symptoms
 - Unexplained fever
 - Night sweats
 - weight loss
 - pruritis
- 

HD: DIAGNOSIS AND TREATMENT

- Tissue biopsy
 - Accurate staging,
 - comprehensive evaluation of possible sites of disease by imaging and sampling (biopsy)
 - Constitutional or B symptoms
 - Chemotherapy +/- radiotherapy
- 

SPECIAL CONSIDERATIONS

- Because cancer usually strikes children at a young age, their families are often very young as well. There may also be other small children at home to look after.
- Sometimes, one or both parents must stop working in order to care for the sick child.



- Siblings are often put to the wayside. Some may be constantly shuttled around and may have problems maintaining a normal schedule.
- They are worried, resentful, and feel abandoned.
- These children may develop behavioral problems, anxiety, or depression.
- Counseling specifically for siblings is often necessary.



UNIQUE ASPECTS OF PAEDIATRIC ONCOLOGY

- Overall prognosis generally good with 65% cure rate
- Usually otherwise healthy
- May have specific sensitivities to treatment
- Long-term survivors have increased chance of
 - secondary malignancy
 - treatment side effects inc infertility

