



## Introduction

## Introductory editorial: Neonatal tumours

Neonatal tumours are a challenging group of childhood tumours. They account for 2% of childhood malignancies with an estimated incidence ranging from 1:12,500 to 1:17,300 live births. The true prevalence of these newborn tumours is unknown due to the variation in incidence reporting as well as the failure to notify tumours in stillborn babies and newborn deaths. Of the tumour types sacrococcygeal teratoma is the most common type of tumour reported, followed by neuroblastoma and soft tissue tumours. Overall there is equal male–female distribution, although certain tumours such as retinoblastoma are more common in males, with teratoma more common in females. Most of these tumours are benign and respond favourably to treatment with a good prognosis.

Oncogenesis in the neonate is multifactorial, however genetic factors are considered to have a more significant role than environmental factors, radiation exposure or drug effects. This is supported by the observation that most cancer cells from neonatal tumours are monoclonal and with a high incidence of chromosomal changes and specific genetic mutations. The best example of this observation is the RB1 gene in retinoblastoma.

Screening programs have shown favourable outcomes in families with retinoblastoma whereas screening programmes for neuroblastoma have not altered the prognosis except for a favourable response reported from Japan. Similarly tumour markers have not been very specific in newborn tumours but have been helpful in detecting recurrences during followup.

Classification of neonatal tumours poses a challenge in that histological features of malignancy do not correlate with clinical behaviour. Local invasion shows no metastatic potential and some benign tumours show malignant tendency or are life threatening because of size and location. Tumour behaviour is unique in babies and scientifically challenging.

With routine antenatal ultrasound screening many of these tumours are now diagnosed before birth. This is particularly true for teratomas and neuroblastomas. Prenatal intervention and fetal treatment is still in its infancy, however successful interventions and treatments have been reported for some lesions such as mediastinal and sacrococcygeal teratomas.

Advancement in prenatal diagnosis and imaging modalities has further enhanced management strategies but at the same time created therapeutic dilemmas. This is particularly true for adrenal lesions.

Surgery is the mainstay of treatment for many neonatal tumours. However, surgery can be technically challenging, if possible at all, and the sensitivity of the newborn to the side-effects of radio- and chemotherapy has limited their utility as adjunctive treatments. The risk/benefit equation in the planning of treatment of neonatal tumours using these modalities is further complicated by the fact that these tumours are often histologically benign, of large dimensions, and are often situated in locations that lead to a fatal outcome.

This special edition of the Journal aims to provide information on the common neonatal tumour types as well as discusses the diagnostic and therapeutic challenges facing the practising clinician.

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