Working Group 1

New strategies for improved development of oncology drugs for children and adolescent

Led by Andy Pearson and Gilles Vassal

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Executive Summary:

The work started in 2012 and explored the regulatory requirements and status of pediatric development of several classes of targeted anticancer drugs, including ALK, B-RAF and MEK inhibitors. Under the US and EU regulations, most of these compounds have been waived because their intended adult indication did not exist in children despite the fact that their targets were relevant to the growth of paediatric malignancies. This was confirmed in 2016 by an ITCC study of the 147 class waivers issued by EMA for 89 oncology products (ref).

Multistakeholder discussions involving parents, academia, regulatory bodies and industry representatives, reached a consensus for establishing a Mechanism-of-Action biology development of oncology medicinal products in children, including a lifecycle approach. Key elements to advance and accelerate drug development for children with cancer were identified:

1. An accessible aggregated database of paediatric biological tumour drug targets aligned with an aggregated pipeline of drugs
   - The Paediatric Pan Cancer Study published in Nature 2018 provided data accessible on PEDPANCAN pedpancan.com/pedpancan/
2. Molecular profiling of all paediatric tumours at diagnosis and relapse
   - Several prospective comprehensive molecular profiling programs are ongoing, such as INFORM, MOSCATO, MAPPYACTS
3. A joint academic–pharmaceutical industry preclinical platform capable of analysing the activity of new drugs, including comparative assessment in appropriate in-vitro and in-vivo fully molecularly characterised models to provide sufficient biological and preclinical data to define the relevance of these drugs to paediatric malignancies
   - The ITCC-P4 Paediatric Preclinical Proof of Concept Platform (itccp4.eu) was launched in 2017 as an IMI2 project
4. Paediatric strategy forums to provide opportunities to inform decisions by involving all stakeholders of drugs of the same class or that are relevant in the same disease
   - The first Paediatric Strategy Forum on ALK inhibition in paediatric malignancies was organized by ACCELERATE and the EMA in January 2017.

Publications by ACCELERATE and key papers:
