Presentation

October 2019

6 years Croatian girl – adopted at birth

B-Precursor ALL, NCI standard risk, High hyperdiploid, CNS1

Schimke Immuno-Osseous Dysplasia (SIOD):

- Auto-immune recessive
- *SMARCAL1* mutation - gene involved in maintaining integrity of the genome.
- Severe T cell immune deficiency
- Skeletal dysplasia
- Glomerulosclerosis with chronic renal failure requiring dialysis/transplant
- Vasculopathy
- Death in early teens due to cerebral vascular disease

ALL Treatment and Outcome

SIOD – chemo intolerance due to renal failure and T cell immune deficiency

VCR/pred x 2 weeks:

- Worsening renal failure and pulmonary oedema
- PICU for CVVH followed by HD/PD

Blinatumomab:

- 5 mcg/m^2 to day 12 followed by 15 mcg/m^2 to day 28
- CRS grade 2 requiring fluid bolus at day 4
- Day 12 BMA 8% blasts, day 28 CR with molecular MRD 0.009%
- MRD negative post cycle 2

CNS directed: IT HC/Ara-C as renal excretion of MTX

Maintenance low dose mercaptopurine without MTX or pulses

EOT January 2022

Remains in molecular remission at last follow-up February 2024 = 40 months from diagnosis

SIOD

Recurrent viral infections- shingles, CMV, adeno encephalitis

Tolerating peritoneal dialysis

Planned for MUD BMT followed by renal transplant from adoptee father

Learning

Response to Blinatumomab a T cell engaging bi-specific antibody despite profound peripheral T cell immune deficiency

Blinatumomab also highly active in acquired T cell immune deficiency

Only determinant of response is BM disease level

Blinatumomab can replace >90% of chemo and provide cure in chemo-intolerant patients