Neurological impairment in a child with perinatally acquired HIV infection

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Patient’s Medical History

G. M., 1yr 6mo, male
Urban area
transfer
due to
Suspicion of HIV infection
NIID “M. Balș”
13 Jan. 2015

Family Medical History

Mother
dg. with HIV infection
- 01. 2015,
at 19 yr
(stage CDC B2)

Father
dg. with HIV infection - 01. 2015,
at 28 yr
Patient's Personal Medical History

- only child
- monitored pregnancy (negative HIV test in month 4 of pregnancy!)
- vaginal delivery, on time
- BW = 3200 g, BL = 51 cm, HC = 35.5 cm (percentile 40),
- Apgar score 9
- favourable postnatal outcome
- breastfed up to 4 months
- complete vaccination
- neurodevelopmental history:
  - good control of the head by 5Mo1/2
  - The child could sit unsupported by 11 Mo
Patient's Personal Pathological History

- Recurrent bronchiolitis (required admission in the hospital more than 10 times)
  - treated with corticosteroids
- Episodes of enterocolitis
- During the last period of hospitalization for fever, wheezing, dyspnea (jan. 2015):
  - Negative Quantiferon TB
  - Negative genetic testing for Cystic fibrosis
  - Positive HIV serology - patient was transferred to NIID Matei Bals
Physical examination on admission:

- Weight = 10kg (under P 25),
- Height=81cm (percentile 30), BMI = 15,2 (percentile 25)
- no fever, “moon” face, facial plethora, hirsutism
- productive cough, dyspnoea with tachypnoea, wheezing, crackles, cervical lymphadenopathy, oral thrush
- hepatomegaly

Neurological exam (1yr6mo):
- microcephaly HC = 44,8 cm (< P 3)
- global neurodevelopmental delay: No walking without assistance, Speech: 2-3 simple words
- pyramidal syndrome:
  - Hyperactive patellar reflex
  - Bilateral plantar clonus
  - spasticity - hypertonia in lower limbs
- normal cranial nerves
Other investigations

• Thyroid hormone levels – normal
• Metabolic diseases screening – negative
• TORCH profile – negative
• Transfontanelar ultrasonography – ventricular enlargement
• Cardiac, abdominal ultrasonography – normal
• ENT exam – normal findings
• LP - CSF VL = 28,000c/ml
• EEG - normal for age
• IRM - asymmetrical cerebral ventricles, mild ventriculomegaly, enlargement of supratentorial peri-cerebral space, mild cortical atrophy
Diagnosis:

- AIDS - stage CDC C3
- Severe steroid-dependent recurrent wheezing
- Oropharyngeal candidiasis (tongue scraping and stool culture showed Candida albicans sensitive to Fluconazol)
- HIV encephalopathy
- Iatrogenic Cushing Syndrome
- PJP & MAC Prophylaxis
Immunologic and Virologic History

CD4 (ce/lcmm)  HIV-RNA (c/ml)

- 1379140 (6.11 log)
- 3323 (3.52 log)
- 703
- 446
- 626

Severe anemia

- 13.01.2015
- 07.04.2015
- 10.08.2015

3TC+AZT+LPV/r  3TC+ABC+LPV/r
Evolution after 8 month of HAART

- Favourable disease development under treatment, very good adherence

- No recurrent wheezing episodes; no need for corticosteroids

- Neurological and cognitive improvement:
  - Head circumference increased slowly (47 cm, P 15)
  - He can walk alone
  - He can follow simple instructions
  - When asked, he points out familiar persons, animals, and toys

- Undetectable CSF VL
Conclusions

• Although the mother’s pregnancy has been monitored and the HIV test has been performed at month 4 and although the child has been hospitalized several times in different hospitals, he has been diagnosed with HIV late, at 1.5yr.

• The neurological impairment of the child progressed from normal at birth to acquired microcephaly, pyramidal tract signs and spasticity.

• Neurologic status improved after 7 months of HAART.

• Limited options, drug interactions and significant side effects make the management of HIV infection in an infant/young child extremely difficult.