

Congenital CMV infection

參考資料：

- 1.RS Gandhi ,Management of congenital cytomegalovirus infection: an evidence-based approach, Acta Pædiatrica ,2009
- 2.D. BUONSENSO et al, Congenital cytomegalovirus infection:current strategies and future perspectives;European Review for Medical and Pharmacological Sciences;2012; 16: 919-935

傳染途徑：transplacental prenatally or via breast milk post-natally

Signs & Symptoms

1. asymptomatic (asymptomatic CCMV infection is defined as the presence of CMV in any secretions within the first 3 weeks of life, but with normal clinical, laboratory and imaging evaluations)
2. Jaundice (62%)
3. petechiae (58%)
4. hepatosplenomegaly (50%)
5. sensorineural hearing loss (SNHL, present in about 30% of symptomatic infants at birth)
6. oligohydramnios/polyhydramnios,
7. prematurity,
8. intrauterine growth retardation,
9. non-immune hydrops, fetal ascites,
10. hypotonia / lethargy
11. poor feeding,
12. thermal instability,
13. CNS involvement is present in approximately two-thirds of infants:
cerebral ventriculomegaly, microcephaly, intracranial calcifications
14. “blueberry muffin” spots,
15. chorioretinitis
16. less frequently: hepatitis, pneumonia, osteitis, and intracranial hemorrhage³⁷.
17. at increased risk for the presence of congenital malformations such as inguinal hernia in males, high-arched palate, hydrocephalus, clasp thumb deformity, and clubfoot^{38,39}.

Table 5 Level of evidence 2 for all definitions

Definitions of symptoms and signs

Microcephaly: head circumference <2 SD below the mean for age or <2nd centile (10,21,25,26)

Symmetric IUGR: birth weight and head circumference <2 SD below mean for age. (10,21,25,26)

Thrombocytopenia: <100 000/ μ L (10,21,26,27)

Conjugated hyperbilirubinaemia: >66 micromol/L (>3 mg/dL) (10,26,27)

Abnormal cranial US: moderate to severe ventriculomegaly and intracerebral calcifications* (10,21,25–28)

Abnormal cranial CT: cortical atrophy, cortical dysgenesis/dysplasia, moderate to severe ventriculomegaly, cerebellar hypoplasia/asymmetry, migration abnormalities and intracranial calcifications (10,21,25–27)

Abnormal ophthalmology screen: chorioretinitis, retinal detachment, optic atrophy, cataract, retinal scarring or sight-threatening infection (10,15,27)

Abnormal hearing assessment: unequivocally failed or >30 dB hearing loss on two or more age-appropriate audiologic tests (4,10,13,14,20–22,26,28,31,51)

*Isolated single ventricular dilatation, subependymal pseudo cyst or lenticulostriatal vasculopathy are not considered pathognomic of CCMV infection.

檢查方法

1. Plasma CMV PCR: 自費 2000 元, W4 下午做檢查, W5 下午發報告
2. DNA virus PCR(檢體 urine): 自費 1000 元, W4 下午做檢查, W5 下午發報告
3. Urine virus culture: 本院微生物科病毒室, 因成長慢約 2~3 週才會長, 若 28~30 天沒長才會發最終報告

決定治療與否？

Management of CCMV infection in newborns > 32 weeks gestation

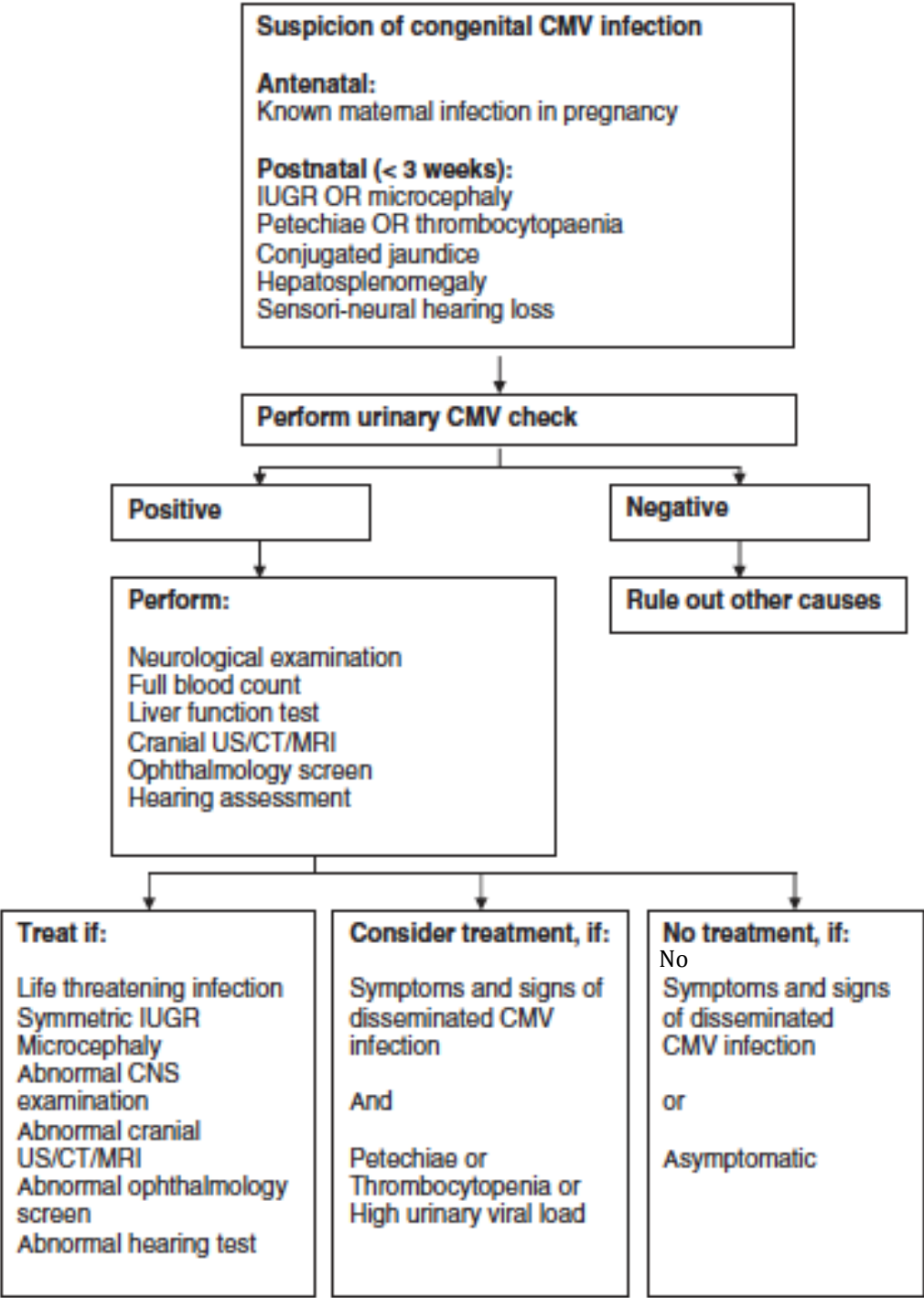


Figure 1 Algorithm for management of CCMV infection.

治療

Table 3 Recommendations for prescription of antiviral medication based on the following studies (30,31,35,38–48)

Drug	Ganciclovir – Intravenous	Valganciclovir – Oral
<i>Drugs for treatment of CCMV infection</i>		
Dose	6 mg/kg twice a day	15 mg/kg twice a day
Time of levels	Just before and 1 h after second dose	Just before and 2 h after third dose
Peak level	6–8 mg/L	6–8 mg/L
Trough level	<0.5 mg/L	<0.5 mg/L
Monitoring	• Three times weekly full blood count, liver function tests, creatinine, urea and electrolytes • Once weekly drug levels	• Three times weekly full blood count, liver function tests, creatinine, urea and electrolytes • Once weekly drug levels
Indication for suspension of treatment	• Absolute neutrophil count <500 cells/μL • Platelet count <25 000 cells/μL	• Absolute neutrophil count <500 cells/μL • Platelet count <25 000 cells/μL

以體重
3 公斤
為例：

Ganciclovir(500mg/支, 自費 1 支 1672) : 18mg Q12H (健保不給付)

- 1 週為 11704 元
- 4 週需 28 支, 總共 46816 元
- 6 週需 42 支, 總共 70224 元

Valcyte/Valganciclovir(450mg/顆, 自費 1 顆 924) : 45mg Q12H (健保不給付,註一)

- 1 tab 溶解在 15ml 水(30mg/ml), 1.5ml Q12H, 1 顆 可吃 5 天
- 4 週為 5.6 顆, 總共 5544 元
- 6 週為 8.4 顆, 總共 8316 元

Follow up

Table 4 Recommendations for follow-up based on these studies (4-6,13,15,51)

Evaluation	Age recommendation
<i>Follow-up for neonates with CCMV infection</i>	
Audiometry	Newborn, 3, 6, 9, 12, 18, 24, 30 and 36 months and then annually to school age
Indirect ophthalmoscopy and visual function	Newborn, 12 months, 3 years and preschool age
Neurological examination and developmental assessment	At each paediatric review

註一：健保抗病毒藥物給付規定

10.7.抗病毒劑 Antiviral drugs (98/11/1)

10.7.1.抗疱疹病毒劑(98/11/1)

10.7.1.1.全身性抗疱疹病毒劑

1.Acyclovir : (98/11/1、100/7/1)

(1)使用本類製劑應以下列條件為限：

I.疱疹性腦炎。

II. 帶狀疱疹或單純性疱疹侵犯三叉神經第一分枝 VI 皮節，可能危及眼角膜者。

III.帶狀疱疹或單純性疱疹侵犯薦椎 S2 皮節，將影響排泄功能者。

IV. 免疫機能不全、癌症、器官移植等病患之感染帶狀疱疹或單純性疱疹者。

V.新生兒或免疫機能不全患者的水痘感染。

VI. 罹患水痘，合併高燒(口溫 38℃以上)及肺炎(需 X 光顯示)或腦膜炎，並需住院者 (85/1/1)。

VII.帶狀疱疹或單純性疱疹所引起之角膜炎或角膜潰瘍者。

VIII.急性視網膜壞死症 (acute retina necrosis)。

IX. 帶狀疱疹發疹三日內且感染部位在頭頸部、生殖器周圍之病人，可給予五日內之口服或外用藥品(86/1/1、87/4/1)。

X.骨髓移植術後病患得依下列規定預防性使用 acyclovir : (87/11/1)

A.限接受異體骨髓移植病患。

B.接受高劑量化療或全身放射治療 (TBI) 前一天至移植術後第三十天為止。

(2)其中 I 與 VI 應優先考慮注射劑型的 acyclovir。疱疹性腦炎得使用 14 至 21 天。(95/6/1、100/7/1)

2.Famciclovir ; valaciclovir : (100/7/1、101/5/1)

使用本類製劑應以下列條件為限：

(1)帶狀疱疹或單純性疱疹侵犯三叉神經第一分枝 VI 皮節，可能危及眼角膜者。

(2)帶狀疱疹或單純性疱疹侵犯薦椎 S2 皮節，將影響排泄功能者。

(3)免疫機能不全、癌症、器官移植等病患之感染帶狀疱疹或單純性疱疹者。

(4)帶狀疱疹或單純性疱疹所引起之角膜炎或角膜潰瘍者。

(5)急性視網膜壞死症 (acute retina necrosis)。

(6)帶狀疱疹發疹 3 日內且感染部位在頭頸部、生殖器周圍之病人，可給予 5 日內之口服或外用藥品。

(7)骨髓移植術後病患得依下列規定用於預防復發性生殖器疱疹：(101/5/1)

A.限接受異體骨髓移植病患。

B.接受高劑量化療或全身放射治療 (TBI) 前一天至移植術後第 30 天為止。

3.Acyclovir、famciclovir 及 valaciclovir 除上述特別規定外，使用療程原則以 10 天為限，口服、注射劑及外用藥膏擇一使用，不得合併使用。（95/6/1、100/7/1、101/5/1）