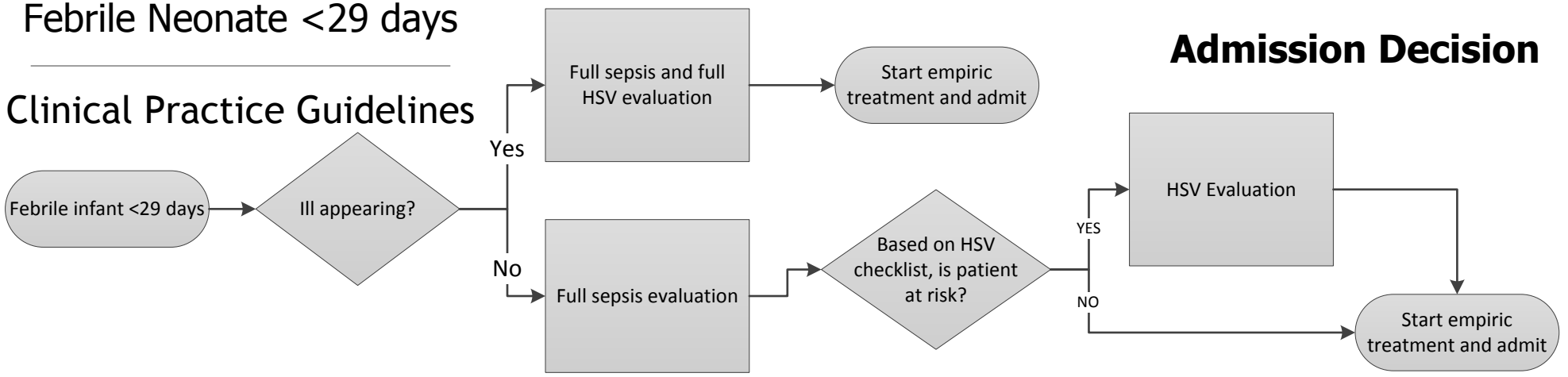
Febrile Neonate <29 days

Clinical Practice Guidelines



Inclusion Criteria

- Infant < 29 days
- Any reliably taken temperature > than 38.0C (100.4F)

Exclusion criteria

- <37 weeks gestational age
- Medical and/or surgical comorbidities
- Recent antibiotic use within last 7 days
- Prolonged NBN course
- Other clear source of bacterial infection such as mastitis, cellulitis, septic joint, etc...

Herpes Simplex Virus (HSV) Checklist

- Hypothermia (<96.5F/35.8C) or respiratory distress
- History of seizures or seizure during evaluation
- Vesicles on exam (including scalp)
- CSF pleocytosis for age (>19 nucleated cells/hpf)
- Elevated transaminases (>2x upper limit of normal)

If any of these are present, testing and treatment is recommended

Full Sepsis Evaluation

- Blood culture
- CBC/plt/diff
- AST/ALT
- BUN/Cr
- Urine culture
- Urinalysis with micro
- CSF gram stain and culture
- CSF cell counts, glucose, protein (Enterovirus pcr with pleocytosis anytime or without pleocytosis [>19 nucleated cells/hpf] but in season)
- Strongly consider CXR for respiratory symptoms and exam not consistent with bronchiolitis
- Strongly consider stool guaiac, leukocytes, and culture for diarrhea

Empiric Treatment

Ampicillin

≤7 days: 100 mg/kg/dose Q8H

>7 days: 75 mg/kg/dose Q6H (see page 3 for continued dosing recommendations based on lab results)

Gentamicin

4mg/kg/dose Q24H

Add cefotaxime 100mg/kg/dose q8h for Gram Negative Rods seen on gram stain

HSV Evaluation

- Serum HSV PCR
- CSF HSV PCR
- Eye/nasopharyngeal/rectal swabs for HSV culture
- Swabs of vesicles for HSV Culture, PCR, DFA (Prioritized in this order if limited by sample. Culture and PCR can be collected in standard viral collection kit and placed in viral medium. DFA should be collected with sterile cotton or Dakron swab and placed in 1-2ml of sterile saline. All samples should be labeled with source of sample and test to be run.)

Empiric Treatment

Acyclovir

20mg/kg/dose Q8H

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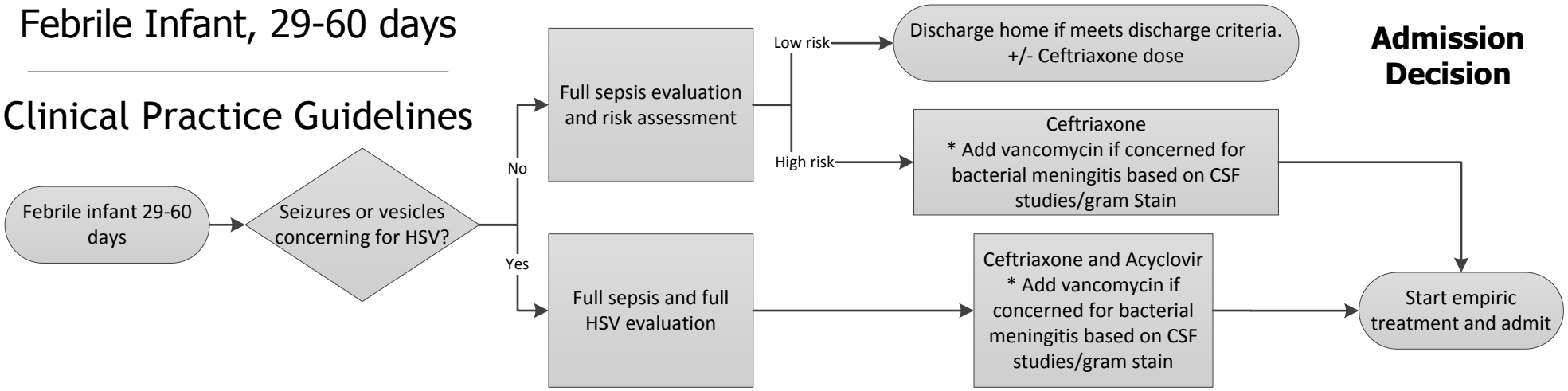
Febrile Infant, 29-60 days

Clinical Practice Guidelines



Inclusion Criteria

- Infant 29-60 days
- Any reliably taken temperature >38.0C (100.4F)

Exclusion criteria

- <37 weeks gestational age
- Medical and/or surgical comorbidities
- Recent antibiotic use within last 7 days
- Prolonged NBN course
- Other clear source of bacterial infection such as mastitis, cellulitis, septic joint, etc...

Risk Assessment

If one of the following is NOT true, consider infant HIGH risk. All true = LOW risk

- Urinalysis with neg nitrites, LE, and < 10 WBC per hpf
- CBC with 5K-15K WBC
- CSF with <10 Nucleated cells/hpf
- CXR (if obtained) without focal infiltrates

Full Sepsis Evaluation

- Blood culture
- CBC/plt/diff
- Urine culture
- Urinalysis with micro
- CSF gram stain and culture
- CSF cell counts, glucose, protein (Enterovirus PCR with pleocytosis anytime or with no pleocytosis [>9 nucleated cells/hpf] but in season)
- Consider CXR for severe respiratory symptoms
- Consider stool gram stain and culture for diarrhea

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Empiric Treatment

Meningitis:

Ceftriaxone **50mg/kg/dose q12h**

*Add *Vancomycin* **15mg/kg/dose q6h** for suspected bacterial meningitis

Bacteremia/UTI:

Ceftriaxone **50mg/kg/dose q24h**

***For infants who test positive for flu or RSV, obtaining u/a with micro, urine culture, blood culture and monitoring off antibiotics is recommended unless workup is concerning for bacterial infection. If starting antibiotics, a lumbar puncture is recommended prior to initiation of antibiotics.**

This guideline does not take into account individual patient situations, and does not substitute for clinical judgment.

HSV Evaluation

- LFTs, Serum HSV PCR
- CSF HSV PCR
- Eye/nasopharyngeal/rectal swabs for HSV culture
- Swabs of vesicles for HSV Culture, PCR, and DFA (**Prioritized in this order if limited by sample. Culture and PCR can be collected in standard viral collection kit and placed in viral medium. DFA should be collected with sterile cotton or Dakron swab and placed in 1-2ml of sterile saline. All samples should be labeled with source of sample and test to be run.**)

Empiric Treatment

Acyclovir

20mg/kg/dose q8H

ED Discharge Criteria

- Classified as low risk (meets ALL criteria)
- Family understanding of diagnosis and plan
- Contact with PCP and PCP who agrees with plan and will follow up next day
- Adequate transportation for follow up PCP appointment the next day or return to the ED should one of the cultures turn positive
- Working phone with documentation of reachable number

Febrile Infant

Clinical Practice Guidelines

Inpatient Management

High risk infants

Serious Bacterial infection
Treat accordingly; review sensitivities and adjust antibiotics accordingly; consult Infectious Disease specialist for all meningitis cases

HSV infection
Continue acyclovir and consult infectious disease specialist

Bacterial workup negative, virus testing positive
D/C antibiotics consider discharge at 24 hours if meets discharge criteria

Bacterial workup negative, virus testing negative
If well appearing, D/C antibiotics and consider discharge at 36 hours if meets discharge criteria; urine culture is completed and negative or is reviewed and is negative; blood cultures are negative; and CSF culture is confirmed negative by review at 36 hours

Low Risk Infants

Serious Bacterial Infection positive:
Treat accordingly (initial empiric treatment outlined below); review culture results and sensitivities and adjust accordingly

Bacterial Infection negative, viral infection negative or positive:
D/C antibiotics and consider discharge at 24 hours if meets discharge criteria; urine culture is final negative or reviewed and negative at 24 hours; blood culture is negative at 24 hours; and CSF is reviewed and negative at 24 hours

Empiric Antibiotics for Infants *<29 days*

Meningitis (CSF pleocytosis)
Ampicillin
≤7 days: 100 mg/kg/dose q8h
>7 days: 75 mg/kg/dose q6h

Gentamicin
4mg/kg/dose q24h

Acyclovir
20mg/kg/dose q8h

*Add *cefotaxime* **100mg/kg/dose** q8h for Gram Negative Rods seen on gram stain

Bacteremia/UTI
Ampicillin:
≤7 days: 100 mg/kg/dose q12h
>7 days: 50 mg/kg/dose q6h

Gentamicin:
4mg/kg/dose q24h

Concern/Testing for HSV Infection
Acyclovir
20 mg/kg/dose q8h

Empiric Antibiotics for Infants *>29 days*

Meningitis (CSF pleocytosis)
Ceftriaxone: 50mg/kg/dose q12h
Add *Vancomycin*: 15mg/kg/dose q6h if concerned for bacterial meningitis based on CSF studies and gram stain
(If renal impairment, contact pharmacy)

Bacteremia/UTI
Ceftriaxone: 50mg/kg/dose q24h

Concern/Testing for HSV Infection
Acyclovir: 20mg/kg/dose q8h

***If on acyclovir and/or other nephrotoxic medications, strongly consider IVF**

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Febrile Infant

Clinical Practice Guidelines

Inpatient Management

Inpatient Minimal Discharge Criteria

Serious Bacterial Infection

Urinary Tract Infection

- Tolerating po
- Afebrile
- Completed appropriate parenteral therapy or home antibiotics arranged (po or IV based on situation)
- Follow up arranged including discussion with PCP

Bacteremia:

- Tolerating po
- Afebrile
- Negative blood culture documented.
- Parenteral therapy completed or home IV antibiotics arranged
- Follow up arranged, including discussion with PCP

Bacterial Meningitis:

- Plan for full inpatient course of antibiotics unless otherwise recommended by Infectious Disease specialist

No Serious Bacterial Infection

No HSV risk or HSV Ruled out:

- Tolerating po
- Follow up arranged including discussion with PCP

References

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