

NEONATÁLNÍ INFEKCE

KONGENITÁLNÍ - ČASNÉ - POZDNÍ

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Neonatologické odd.

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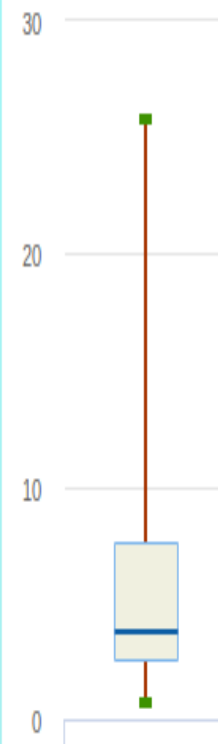
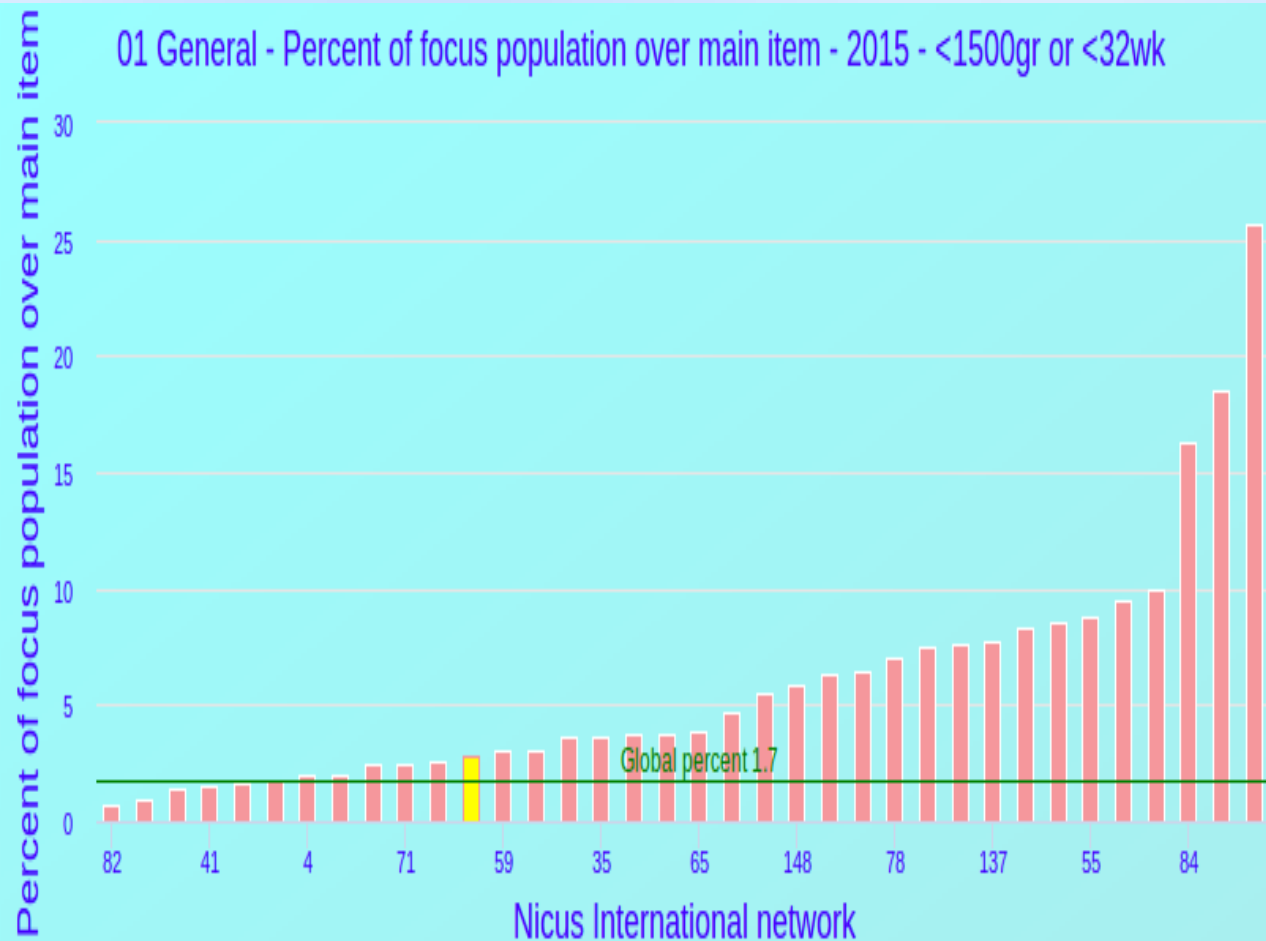
NEONATÁLNÍ INFEKCE

OBSAH

1. INCIDENCE A SYMPTOMATOLOGIE
2. INTRAAMNIÁLNÍ ZÁNĚT A INFEKCE
3. PLACENTÁRNÍ MIKROBIOM
4. VIROVÉ INFEKCE

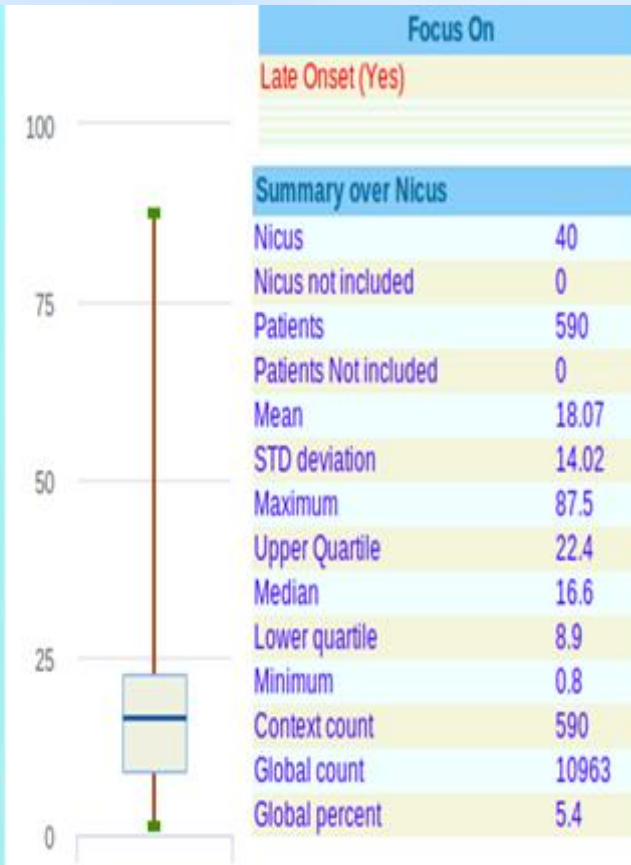
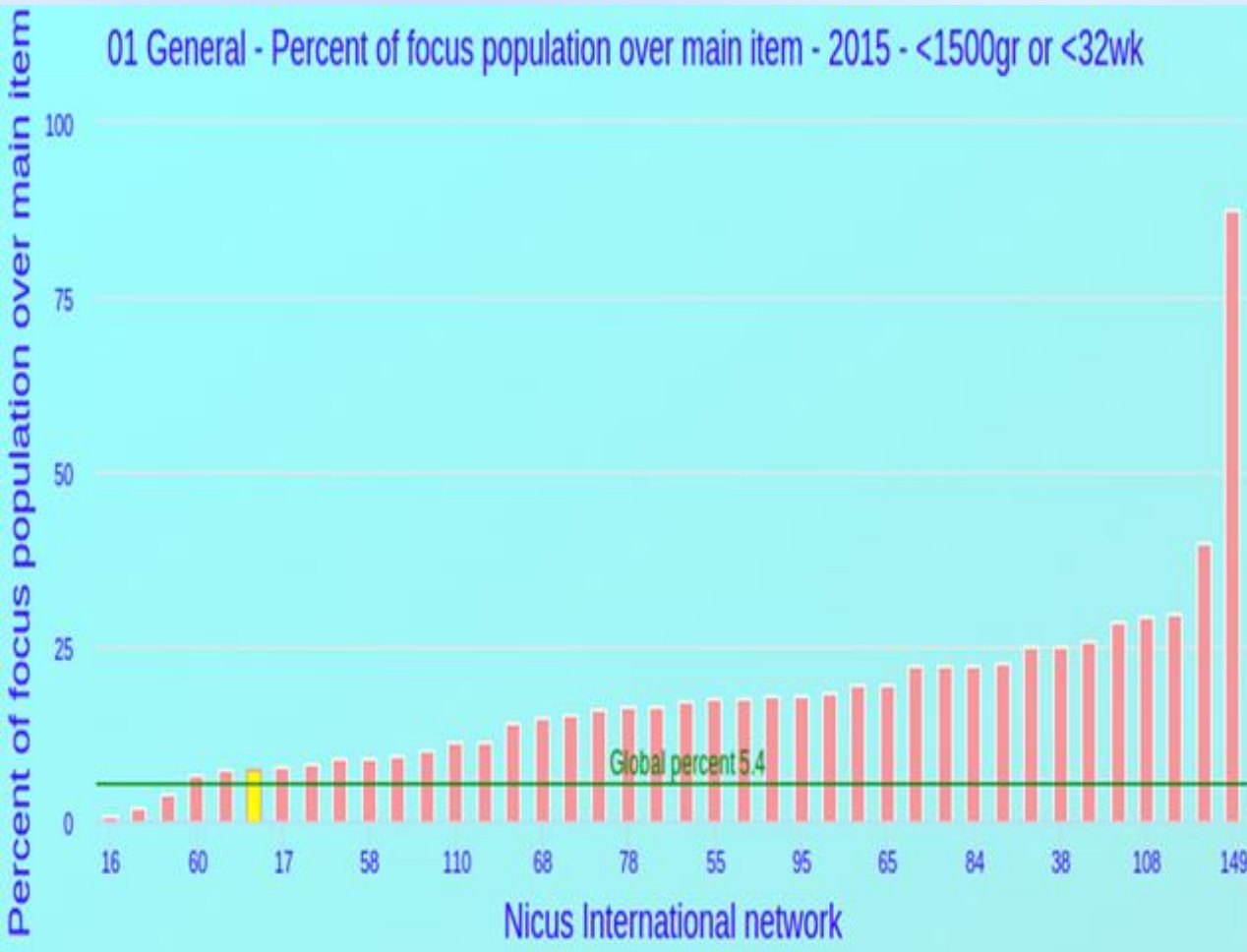
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01 General - Percent of focus population over main item - 2015 - <1500gr or <32wk



Focus On	
Early Onset (Yes)	
Summary over Nicus	
Nicus	36
Nicus not included	0
Patients	189
Patients Not included	0
Mean	5.87
STD deviation	5.25
Maximum	25.7
Upper Quartile	7.6
Median	3.8
Lower quartile	2.5
Minimum	0.7
Context count	189
Global count	10963
Global percent	1.7

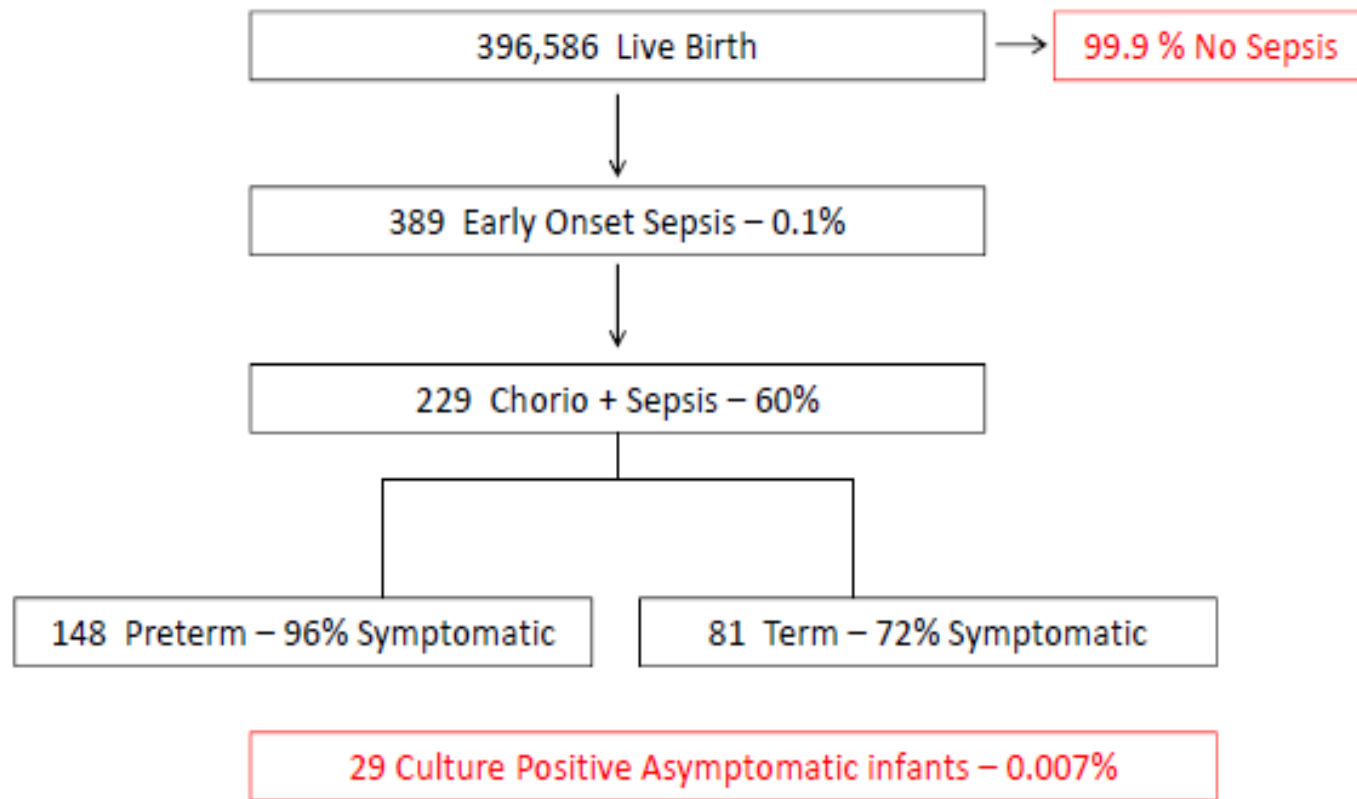
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Nízká prevalence asymptomatických novorozenců s bakteriemií

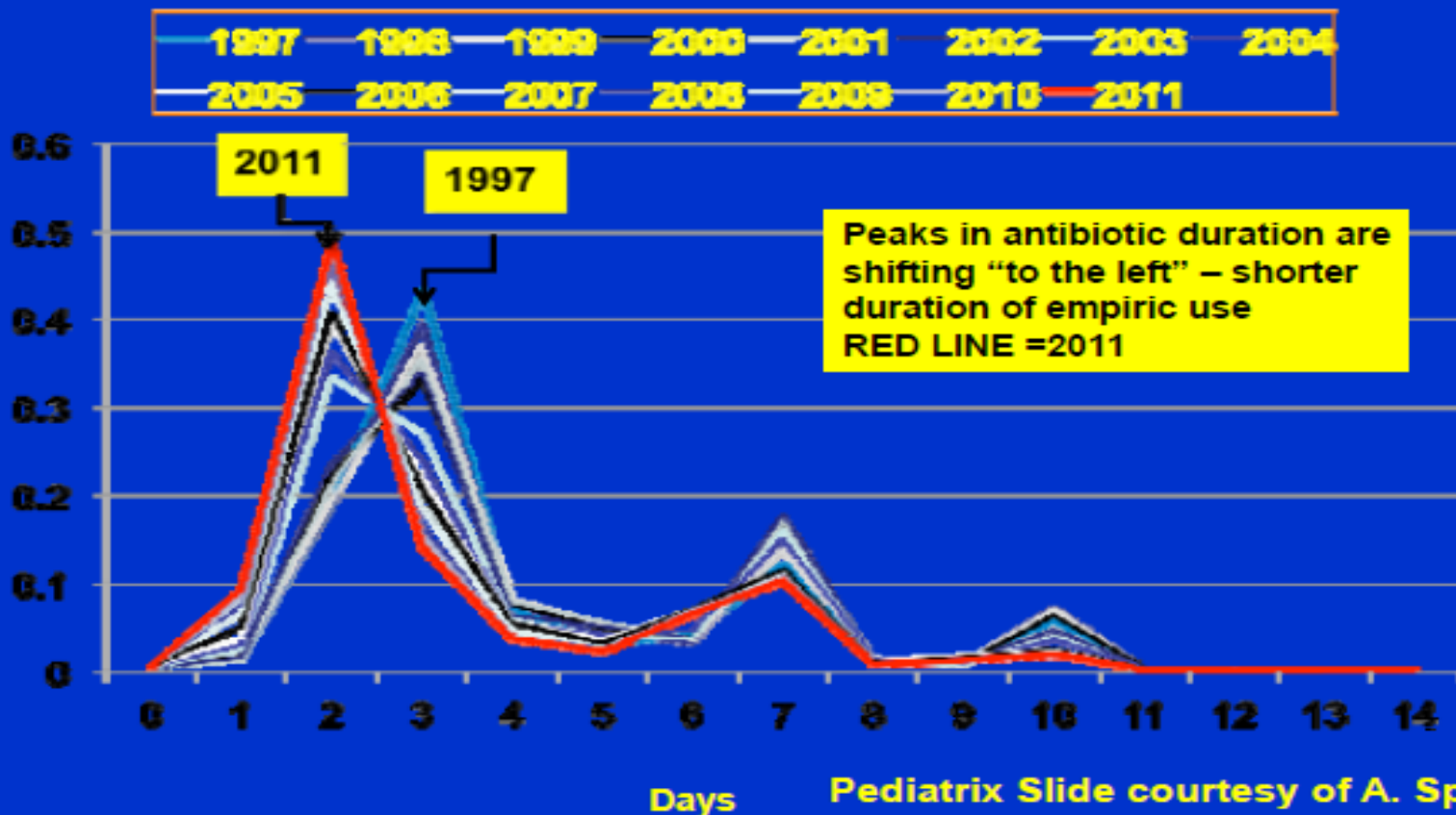
Chorioamnionitis and Culture-Confirmed, Early-Onset Neonatal Infections



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Vyšší frekvence a kratší doba podávání ATB u nekolonisovaných nedonošených

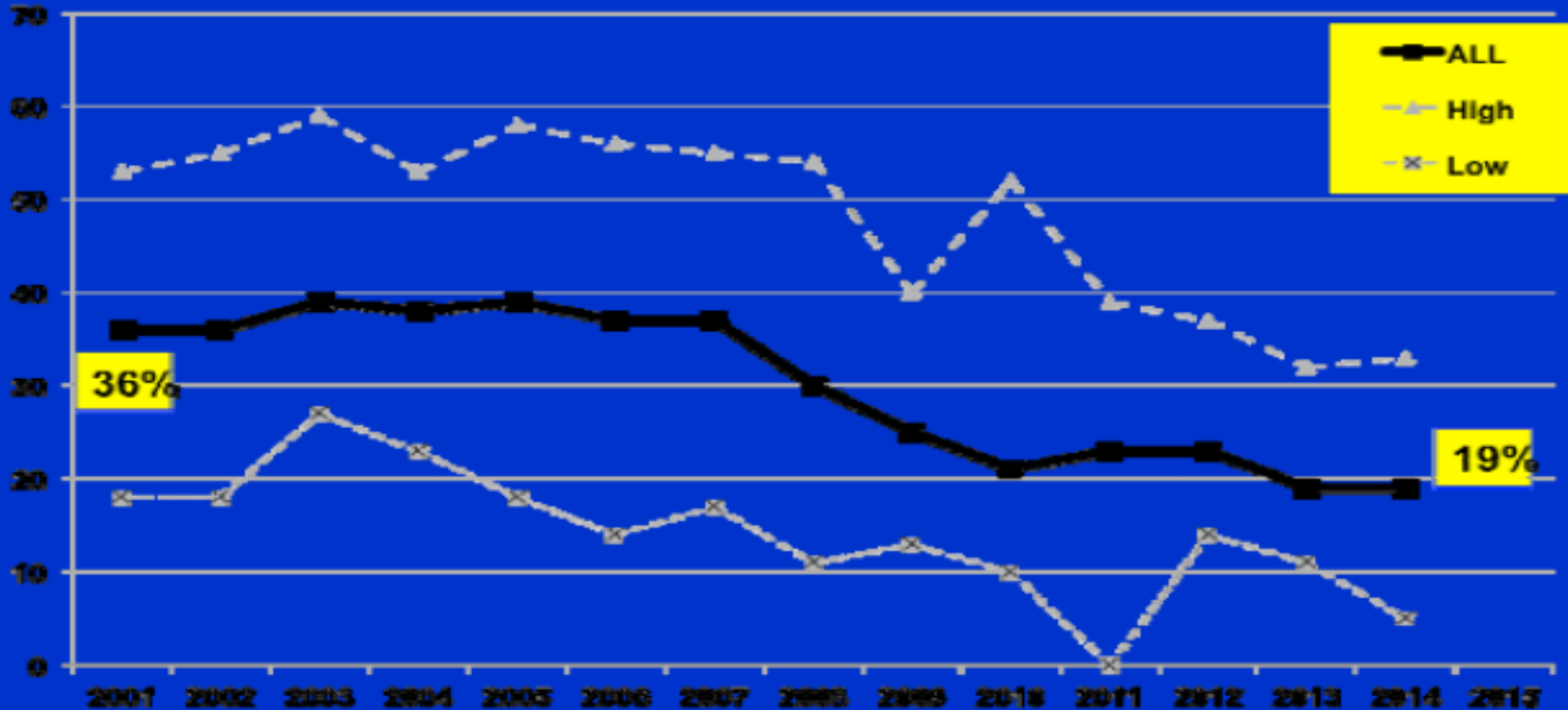
Pediatrix Data Antibiotic Duration Negative Cultures



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Nižší frekvence pozdních sepsí extrémně nezralých novorozenců

NICHD-ELBW LATE ONSET SEPSIS

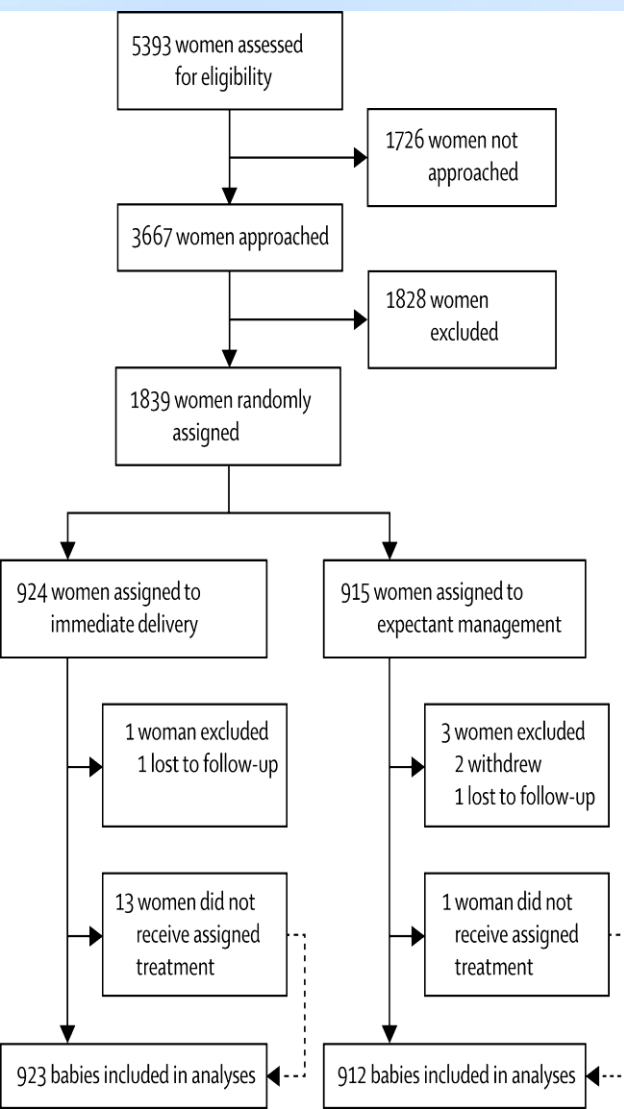


CHOOSING WISELY

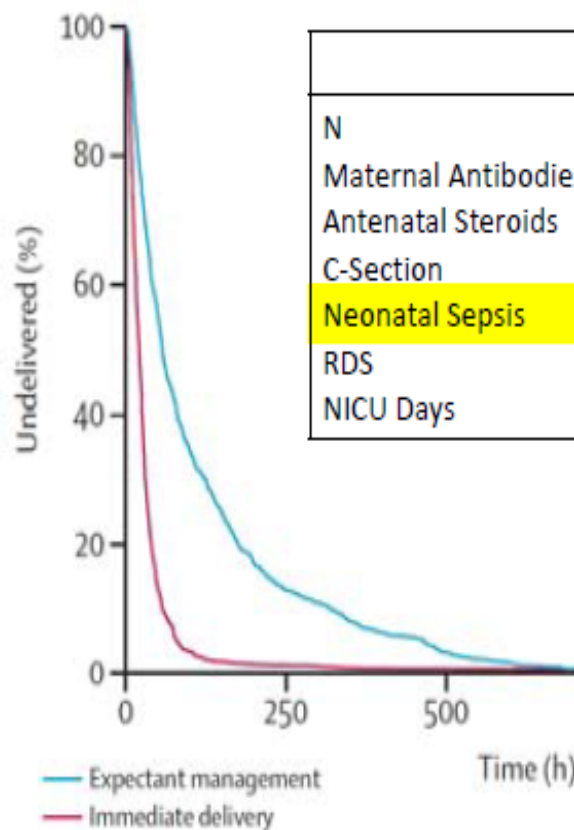
VON Vermont Oxford NETWORK

NEONATÁLNÍ INFEKCE

Postup při odtoku plodové vody lehce nezralých novorozenců



Immediate Delivery or Expectant Management of Pre-labor PPRM at 34-36 Weeks – PPROMT Trial



	Immediate	Expectant	P
N	923	921	-
Maternal Antibodies	86%	86%	-
Antenatal Steroids	41%	39%	-
C-Section	26%	19%	<0.0001
Neonatal Sepsis	2%	3%	0.37
RDS	8%	5%	0.0008
NICU Days	4%	2%	<0.001

Morris, et al., *The Lancet*, 2016

NEONATÁLNÍ INFEKCE

Chorioamnionitis - IAI

Classification of triple I

Features of isolated maternal fever and triple I with classification*	
Terminology	Features and comments
Isolated maternal fever ("documented" fever)	Maternal oral temperature 39.0°C or greater (102.2°F) on any one occasion is documented fever. If the oral temperature is between 38.0°C (100.4°F) and 39.0°C (102.2°F), repeat the measurement in 30 minutes; if the repeat value remains at least 38.0°C (100.4°F), it is documented fever.
Suspected triple I	Fever without a clear source plus any of the following: 1. Baseline fetal tachycardia (greater than 160 beats per min for 10 min or longer, excluding accelerations, decelerations, and periods of marked variability) 2. Maternal white blood cell count greater than 15,000 per mm³ in the absence of corticosteroids 3. Definite purulent fluid from the cervical os
Confirmed triple I	All of the above plus objective laboratory findings of infection, such as [†] : 1. Positive amniotic fluid Gram stain for bacteria, low amniotic fluid glucose (eg, ≤ 14 mg/dL), high amniotic fluid white cell count in the absence of a bloody tap (eg, > 30 cells/mm³), or positive amniotic fluid culture results, or 2. Histopathologic evidence of infection or inflammation or both in the placenta, fetal membranes, or the umbilical cord vessels (funisitis)

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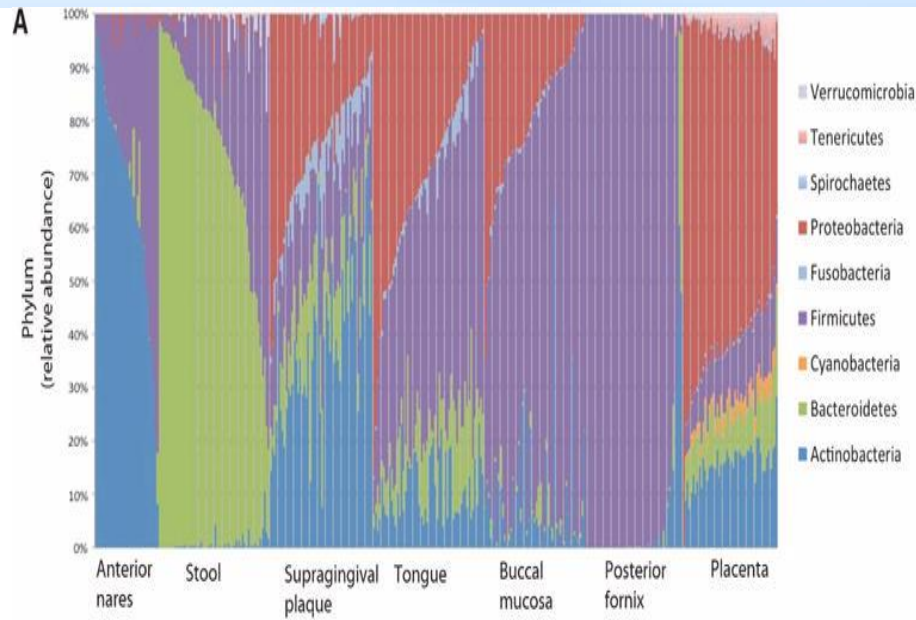
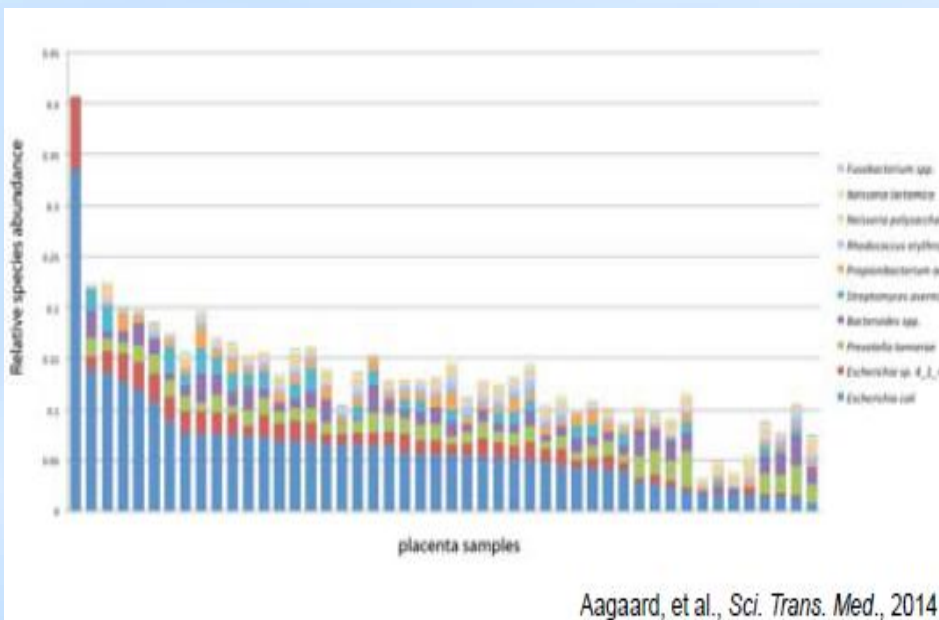
Chorioamnionitis - IAI

- **KLINICKÁ**
horečka matky, tachykardie plodu, děložní citlivost, výtok a předčasný odtok plodové vody
- **HISTOLOGICKÁ**
deciduální a chorionová granulocytární zánětlivá infiltrace
- **LABORATORNÍ**
leukocyty, bakterie, nízká hladina glukosy, elevace IL-6 v amniální tekutině

Diagnostika se nepřekrývá - není příliš spolehlivá v léčbě infekce matky a plodu.

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Sterilní nitroděložní prostředí ?!?



Chorioamniální biom se při chorioamnionitidě mění zvýšeným výskytem komensálních kmenů urogenitálního traktu a dutiny ústní.

Prince, et al. 2016

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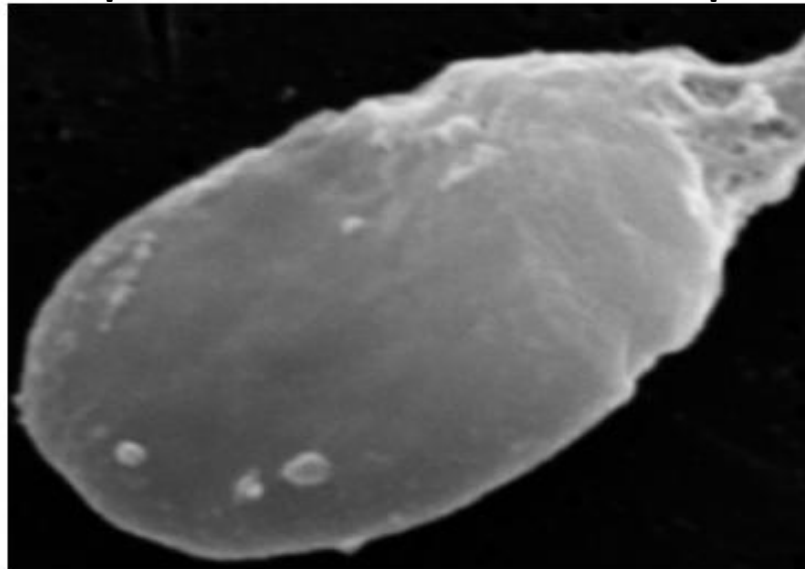
New Information from Maternal / Fetal Biome

- Is it relevant to clinical medicine?
- Does the fetus respond to or “need” these biome exposures?
- Do exposures program long-term outcomes?
- Do clinical interventions (antibiotics) disrupt the biome with consequences for the newborn?

I have no answers to the questions.

A. Jobe 2016

Ureaplasma on Surface of Human Sperm



Christina Knox, Queensland Univ. of Technology

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ZIKA virus

Abnormalities	Study 1 n=27	Study 2 n=23	Study 3 n=23	Study 4 n=45	Study 5 n=13	Study 6 n=3	All studies approximate frequencies n=134
Calcifications	20 (74%)	23 (100%)	23 (100%)	45 (100%)	12 (92%)	3 (100%)	94%
Ventricular enlargement	12 (44%)	23 (100%)	20 (87%)	43 (96%)	13 (100%)	3 (100%)	85%
Migrational abnormalities	9 (33%)	18 (78%)	22 (96%)	44 (98%)	13 (100%)	3 (100%)	81%
Cerebellar hypoplasia	-	17 (74%)	6 (26%)	35 (78%)	0	2 (67%)	56% (107)
Decreased brain volume	-	-	21(91%)	45 (100%)	13 (100%)	3 (100%)	98% (84)
Septation	-	-	-	8 (18%)	5 (38%)	2 (67%)	24% (61)
Corpus callosum hypoplasia	-	-	6/8 (75%) with MRI	38 (84%)	13 (100%)	1 (33%)	-

1) Schuler-Faccini L, MMWR Morb Mortal Wkly Rep 2016;65(3):59–62. 2) Hazin AN, NEngl J Med 2016; 3) de Fatima Vasco Aragao M, BMJ 2016; 4) Soares de Oliveira-Szejnfeld P, Radiology 2016; 5) Cavalheiro S; Child Nerv System 2016; 6) Guillemette-Artur P, Pediatr Radiol (2016)

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cCMV - ZIKA virus

cCMV

- Microcephaly
- Chorioretinitis
- Calcifications
- Septation occipital horn
- Migrational disorders
- Ventriculomegaly

Zikavirus

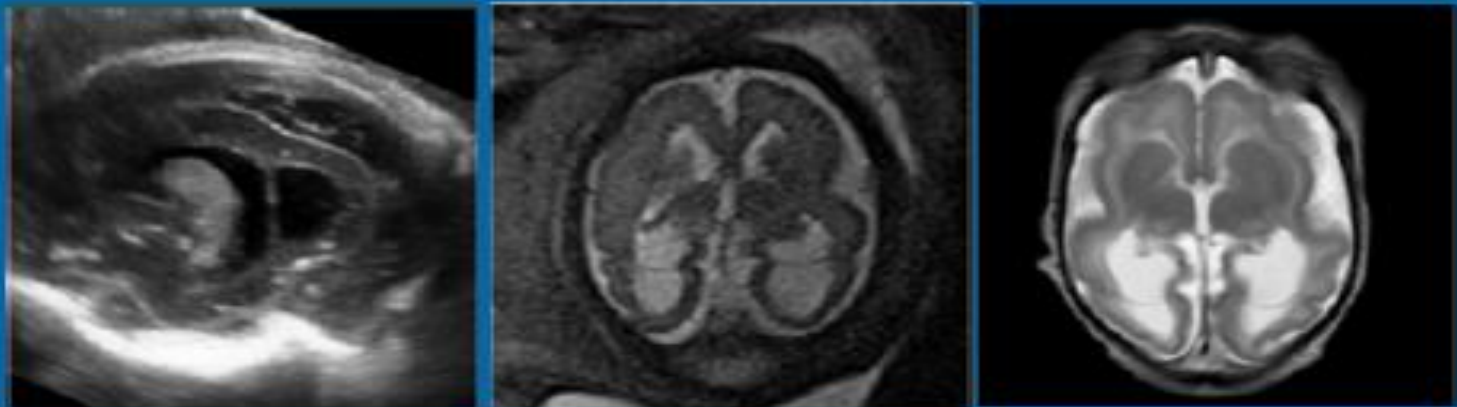
- Micrencephaly
- Contractures
- Chorioretinitis
- Calcifications (bandlike)
- Septation occipital horn
- Migrational disorders
- Ventriculomegaly

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ZIKA virus

Congenital Brain Abnormalities and Zika Virus: What the Radiologist Can Expect to See Prenatally and Postnatally.

Soares de Oliveira-Szejnfeld P et al, Radiology 2016



Septation occipital horn no longer restricted to
cCMV infection!!

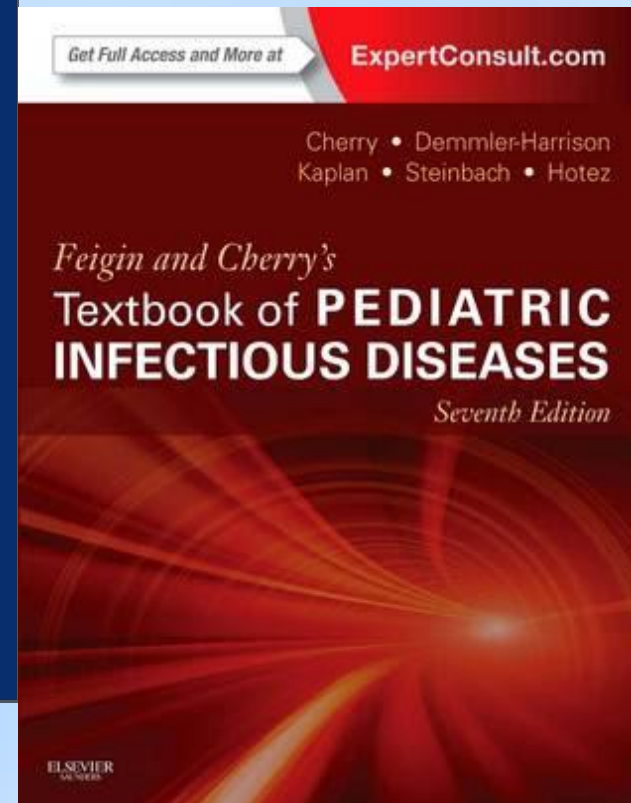
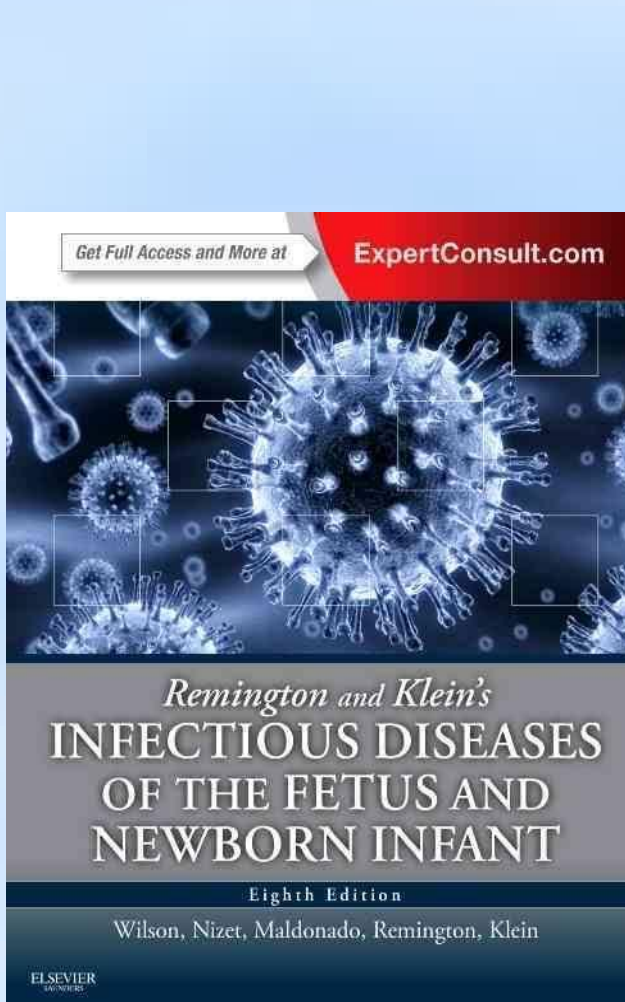
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DĚKUJI ZA POZORNOST

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DOPORUČENÁ LITERATURA 2014 - 2016



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ZIKA virus

Table 1 Clinical and neurological findings of the most common arboviruses

Virus/symptoms	Zika virus	Dengue virus	Chikungunya virus	West Nile virus
Fever	+	++++	++++	++
Rash	++++	++	++	++
Myalgia	++	+++	++	++
Arthralgia	++	+	++++	+
Peri-articular oedema	++	+	+++	-
Conjunctival hyperaemia	+++	+	+	++
Headache	++	+++	++	
Neurological syndromes	Microcephaly, GBS, meningoencephalitis, myelitis	Encephalopathy, seizures, GBS, mononeuropathy, myelitis	Meningoencephalitis, acute flaccid paralysis, GBS, sensorineural hearing loss	Meningitis, encephalitis, acute flaccid paralysis, brachial plexopathy, demyelinating neuropathy, motor axonopathy, axonal polyneuropathy, motor radiculopathy, myasthenia gravis, cranial nerve palsies