Congenital TB

ARE WE UNDERCOUNTING?

Two Babies. Two Deaths. Only One Counts.

HOW CAN THAT BE ACCEPTABLE?

Iowa's First Known Case of Congenital TB Since…

- 22 year old Guatemalan woman w/no HX of prenatal care
- Recently moved from MN. Undocumented/Global Pandemic
- 12/15/2020: Mom *allegedly* healthy/gives birth (31 weeks)
- Preemie in NICU
- Mom DC/doesn't return as she now feels sick
- Preemie seems healthy, but develops breathing difficulties @ 2 weeks (12/30/2020) & requires O2
- Tele visits w/Mom = Results in recommendation to ED for CXR
- CXR: Infectious process, diffuse interstitial changes/mild patchy ground glass opacities. Can't produce sputum's

…Who Knows? We Don't Properly Screen. Neither Do You

- 1/6/2021: Mom admitted to same hospital as baby. CT = multiple cavitary lesions. Refused BAL
- 1/7/2021: Sputum collected = AFB+/TB+/no rpoB detected
- TB meningitis suspected (confirmed)
- The hospital notifies TB Program for the 1st time! Informs Mom gave birth 3 weeks earlier
- How is baby? Immediate call to Dr. Armitige/TB TX started same day
- 1/8/2021: Baby Boy dies in nurses arms
- Tracheal aspirate collected from Baby Boy = TB
- Mom: Mediastinal/Hilar lymph node involvement. Inflammation uterus, ovaries and adnexa. Endometriosis
- Mom placed on suicide watch

Iowa's 2nd Case of Congenital TB

- 3/18/2021: 26 year-old Marshallese woman hospitalized with 5 day HX of headache/neck pain/unstable balance. Recent HX of miscarriage 1/27/2021 (18 weeks). Vaginal spotting ever since
- CT brain showed no evidence of intracranial abnormality. LP elevated WBC
- Suspected bacterial meningitis
- Transvaginal ultrasound: Retained products of conception, dilated tubes, tubal mass both ovaries concerning for tubo-ovarian abscess
- CT abdomen & pelvis: Multiple peritoneal abscesses, dilated fallopian tubes w/rim enhancement/thickening consistent w/tubal ovarian abscess, diffuse peritoneal lining enhancement consistent w/ peritonitis
- D & C performed
- CXR normal

The Case Builds…

- 3/19/2021: CT Chest - small triangular area in posterior aspect of the LUL 1.6 cm x 0.8 cm suspicious for pneumonia/possibility of early TB cannot be RO. Mild scarring or atelectasis in lung bases and dependent portion of the lungs
- 3/19/2021: MRI Brain - multiple supratentorial & infratentorial enhancing lesions, some w/rim enhancement w/associated minimal leptomeningeal enhancement… likely representing inflammatory granulomas probably tubercular in nature
- Adrenal insufficiency, likely TB adrenalitis
- 3/20/2021: RIPE Initiated. CSF TB+

This Sounds Familiar…

- 3/21/2021: TB Program notified of + TB lab result
- Review of ID notes mentions recent (8 week) HX of miscarriage. Gestational age 18 weeks
- We immediately questioned if the baby died from TB
- Reviewed with Heartland National TB Center - Dr. Armitige - 100% confident baby died from TB
- TB confirmed multiple sites (pulmonary, disseminated TB to include the brain, spine and the tissue (*leftover product of conception*) collected during the D & C

Live Birth vs. Miscarriage/Stillbirth

Premature Baby Boy

- *Premature* baby SVD @ 31 weeks
- Tracheal aspirate confirms TB
- Baby Boy died at 34 weeks
- If no live birth, not countable
- A fetus* with TB doesn't count
- Countable as a case of TB due to live birth

Baby (Fetus) Girl or Boy

- Miscarriage @ 18 weeks
- Leftover product of conception confirms TB
- Mom's site of disease includes cervix/ovarian tubes
- Inappropriately NOT counted as a case of TB?

There are <400 cases of Congenital TB All-time in the English Literature

IS THAT BECAUSE ….

…We Are Undercounting?

- CDC has multiple publications that proclaim untreated TB disease during pregnancy carries significant risk to the fetus/new born child
- Despite the risk to the fetus, CDC does not collect any data to support this claim
- The RVCT **does not** review a history of miscarriage or stillbirths in women of childbearing age
- No data to support if women of childbearing age diagnosed with TB disease had a miscarriage or stillbirth during the months (sometimes year+) preceding TB DX
- *We don't ask the questions – therefore we don't have the answers*

Ask Yourself:

- Do the ***vast majority*** of congenital TB cases result in fetal death by either miscarriage or stillbirth?
- Does ***only*** advanced TB disease result in miscarriage or stillbirth?
- Does the site of disease have to involve the reproductive system?
- How much does severity of disease effect the developing fetus?
- Is TB disease of any site/any severity a significant risk factor in women having miscarriage or stillbirth?

Initial Challenges

- Do TB subject matter experts agree this is worth exploring?
- If no, this is over

If Worth Exploring…

- Heartland takes the functional lead to move this topic to the three other COEs
- Assuming support from the four COE's, develop a cohesive approach to the counting of congenital TB cases that don't survive to a live birth
- Approach CDC TB Division with this proposal
- Revise the RVCT to include a review of a history of miscarriage/stillbirths with women of child bearing age
- A select panel of pediatricians with expertise in TB develop counting criteria for diagnosing congenital TB when a fetus does not survive to a live birth
- Possible issues: Age of embryo or fetus, site of disease, severity of disease
- The revised RVCT would reflect this counting criteria

Why Do All of This?

- Initial Outcome: Determine the true morbidity of congenital TB
- Long-term Outcome: Determine if it is reasonable to screen high-risk mothers for TB as part of routine prenatal care
- Embryos and fetus survive to become babies
- Babies survive to become kids
- Kids turn into teenagers … wait…
- Teenagers turn into adults

Iowa Now Reviews a HX of Miscarriage/Stillbirths

- 3/4/2022: 38 year old woman from the DRC presents for fever and pelvic mass evaluation
- High suspicion for gynecological cancer
- Hx of untreated LTBI following + *IGRA during prenatal care* (parents had TB). Postpartum LTBI TX recommended/no FU
- Experiencing abdominal tension for months
- CT abdominal/pelvis: 4.4 cm right adnexal mass, enlarged mesenteric lymph nodes and omental caking
- Initial pelvic biopsies sent to pathology
- Repeat paracentesis and biopsy. Peritoneal aspirates TB+

Count or Not Count???

- Infectious Disease notes extensive. No mention of miscarriage/stillbirth
- We requested the DOT worker review a HX of miscarriage/stillbirth
- Miscarriage occurred Nov 2021 – 4 months prior to diagnosis
- Miscarriage @ 8 weeks. Classified as embryo
- Fetus @ 9 weeks
- Baby only @ birth
- Did embryo die of TB?

CERTAMEN AD FINEM PERGIT

THE FIGHT CONTINUES TO THE END

IOWA TB CONTROL PROGRAM