Message

From: Partridge, Charles [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=27DA56DA9A12472787EF56077099CF36-PARTRIDGE, CHARLES]
Sent: 6/3/2020 6:15:14 PM
To: Fritz, Jason [Fritz.Jason@epa.gov]
Subject: FW: Meconium slides - revised
Attachments: 1989_Friel_Meconium Trace Elements in Pre-Full Term.pdf; 2013_Turker_Pediatrics_International.pdf; Meconium Bullets_12-7-19 rev.pptx

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From: Woodbury, Lynn <woodburyl@cdmsmith.com>
Sent: Saturday, December 7, 2019 4:45 PM
To: Partridge, Charles <Partridge.Charles@epa.gov>
Cc: Greene, Nikia <Greene.Nikia@epa.gov>; David Shanight <shanightdt@cdmsmith.com>
Subject: Meconium slides - revised

Charlie –

Here is an updated version of the meconium PowerPoint slides. As requested, I added a few more examples of the units discrepancy for other metals, folded in some of the responses to the reporter's questions, and revised the presentation to be more of a Q&A format.

I've also attached two additional journal articles regarding meconium. Unfortunately, each has limitations for use (described below).

1. The Turker et al. (2013) study is one that is being referenced in the McDermott paper; however, I didn't find this study to be especially helpful because of the way the meconium concentrations are being reported. First, the values indicated they are being expressed as ng/g/kg (i.e., as a dose per mass of infant body weight). Because individual body weight values aren't provided, we would need to convert based on an assumption the median reported body weight applies to all samples, which is not ideal. Second, I suspect there may be a typo in the reported units. In other places within the article text, it appears the Greek mu character (µ) was manually added after the fact. Given expected meconium concentrations in other studies, I suspect the 'n' character in ng/g/kg was supposed to replaced by µ. The other oddity about this study is that the detection limits are reported as µg/mL, which is unexpected as meconium is a solid. These are Turkish researchers publishing an English translation in a Japanese journal…I'm thinking something may have gotten lost in translation. I have not included this results of this study in the presentation, but it may be worth reaching out to the researchers to clarify their results.

2. The Friel et al. (1989) study looked promising at first, but it too has limitations due to the way the results were reported. Meconium concentrations were reported as µg/kg, BUT the kg in the denominator is not based on the mass of meconium, but the mass of the infant. I estimated the meconium concentration based on the total metal mass and then normalizing based on the average mass of stool passed for full-term infants (8.9 g), which is not ideal, but provides another dataset to support our findings.

Talk to you tomorrow at noon,
Lynn

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