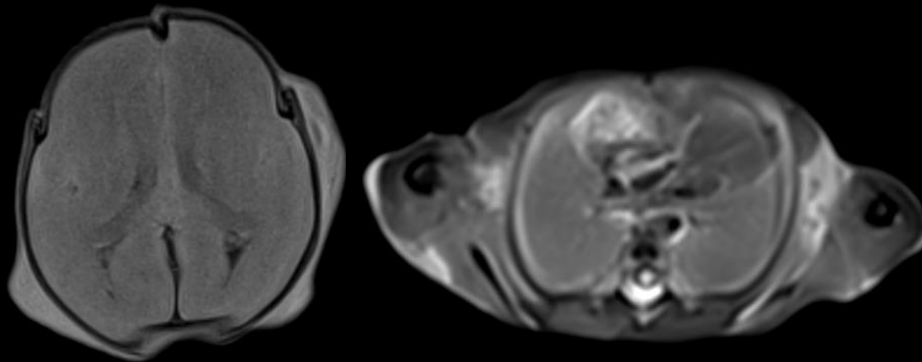
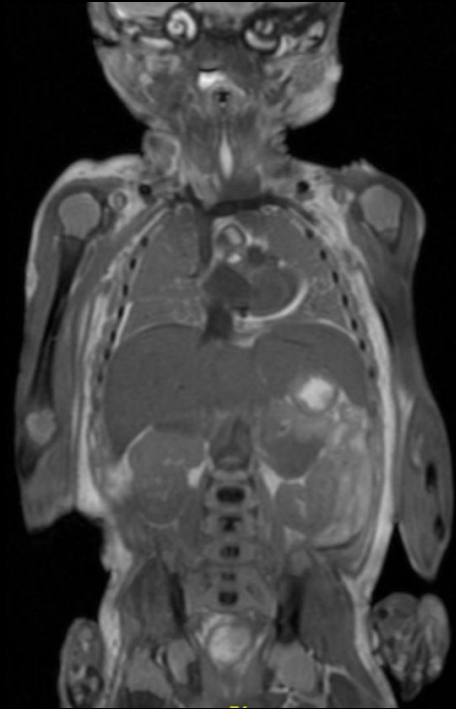


Is it necessary to perform perinatal autopsy after antenatal ultrasound and post-mortem MRI (PMMR)?



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ESPR 2019 – Thursday, 16th May 2019 – Outreach and Post Mortem Session

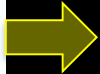
Disclosures

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Background



Aim

Determine value of doing additional perinatal autopsy when prenatal US and post-mortem MRI have already been performed.

Methods

Q2. DIAGNOSTIC ACCURACY



Prenatal US findings
Reviewed by senior
fetal medicine expert



Post-mortem fetal MRI
6 year period
(2007 – 2013).



CONCORDANT
PARTIALLY
CONCORDANT
DISCORDANT

Q1.
ADDITIONAL
YIELD?



A
U
T
O
P
S
Y



Results

81 fetuses (43 male)

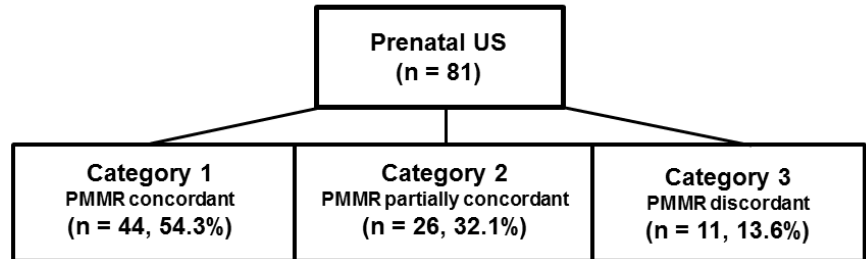
21 weeks GA (14 – 41)
346g (16 – 3480g)

Delivery to MRI

6 days (0-36 days)

Delivery to Autopsy

9 days (1 – 42 days)



Results

Which cases did autopsy add useful information?

Concordant PMMR and US (2/44 = 4.5%)

- 1 x cerebellar heterotopia (PMMR and US only identified ACC)
- 1 x VSD and gut malrotation (PMMR and US showed VM)

Partially concordant PMMR and US (8/26 = 30.8%)

- 1 x Clarifies lack of findings (lack of cardiac anomalies)
- 4 x Characterises findings (4 x neurological)
- 3 x Additional findings incompletely seen (1 x CCHD; 1 x malrotation; 1 x CMV sepsis)

Discordant PMMR and US (2/11 = 18.2%)

- 1 x multiple neuronal migration anomalies (PMMR normal; US = VM)
- 1 x cortical brain malformation (PMMR normal; US = ACC)

Results

	Sensitivity %	Specificity %	Concordance %
CNS US	74.2	89.2	82.4
CNS PMMR	80.0	88.9	84.8
Cardiac US	71.4	95.8	93.6
Cardiac PMMR	42.9	96.9	91.7
Thoracic US	50.0	97.0	90.9
Thoracic PMMR	80.0	100	97.4
Abdominal US	80.0	93.7	91.0
Abdominal PMMR	80.0	100	96.1
MSK US	94.7	83.3	86.3
MSK PMMR	89.5	100*	97.4*
OVERALL US	76.8	92.5	89.0
OVERALL PMMR	79.0	97.9*	92.8*

Discussion

Limitations:

- Small study sample
- Timing between US and MRI – some findings may resolve/develop
- Subjective impression of ‘clinically significant’ information

Conclusion

Most of the time ultrasound and MRI were concordant, and there was little added value from autopsy.

If partial concordance or discordance, the yield from autopsy is higher.

If you want to read more...




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SPECIAL ISSUE ARTICLE

WILEY PRENATAL DIAGNOSIS

Is traditional perinatal autopsy needed after detailed fetal ultrasound and post-mortem MRI?

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Minimally Invasive Autopsy (MIA) Clinical Research Team



Inset: Prof Neil Sebire (top left), Prof Andrew Taylor (bottom left), Dr Michael Ashworth (top right), Dr Tom Jacques (bottom right)

Group image (left to right): Dr Susan Shelmerdine, Jade Parmenter, Dr Celine Lewis, Anna Guy, Lakeisha Ward, Hannah McGarrick, Wendy Norman, Rod Jones, Dr Owen Arthurs, Toby Hunt, Dr Ciaran Hutchinson, Ian Simcock, Dr Alistair Calder