

KETONURIA IN HYPEREMESIS GRAVIDARUM: A PREDICTOR FOR DISEASE SEVERITY

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- Declaration of interests: none



Ketonuria

- Ketones in urine
- Body uses fat as major energy source
- ‘Measure of starvation’

- Very often used in HG
 - diagnosis
 - management
 - research

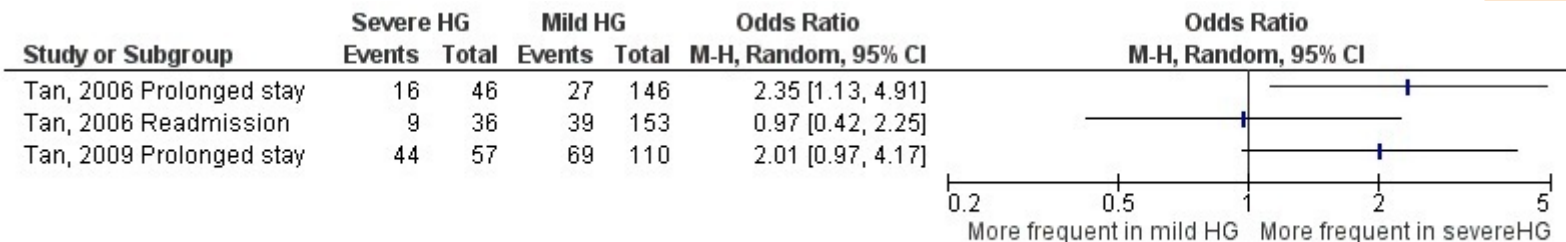


Ketonuria and HG disease severity; what do we know?

OBSTETRICS

Diagnostic markers for hyperemesis gravidarum: a systematic review and metaanalysis

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After the SR

	Mild HG n=147	Moderate HG n=153	Severe HG n=133	p
Ketonuria , Median (IQR)	2(1:3)	3 (1:4)	3(2:4)	<0.001



Objective

We aimed to assess the association between ketonuria and HG disease severity, defined as maternal weight loss, severity of nausea and vomiting and quality of life.



Study design

- Multicentre prospective cohort
- October 2013 – March 2016
- Women hospitalised for HG between 5 and 20 weeks gestation

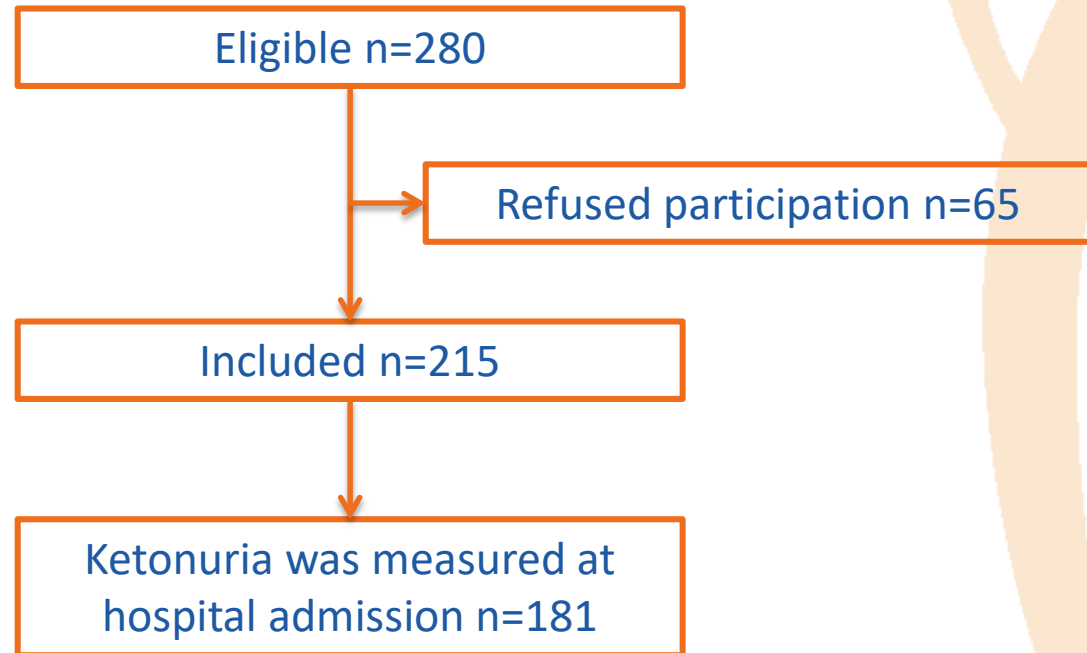


Study design

- Ketonuria at admission
 - dipstick: negative, 1+ - 4+
- Prepregnancy weight
- Weight measurement at inclusion and 1 week after inclusion
- 24-PUQE and NVPQoL questionnaires at inclusion and 1 week after inclusion



Results





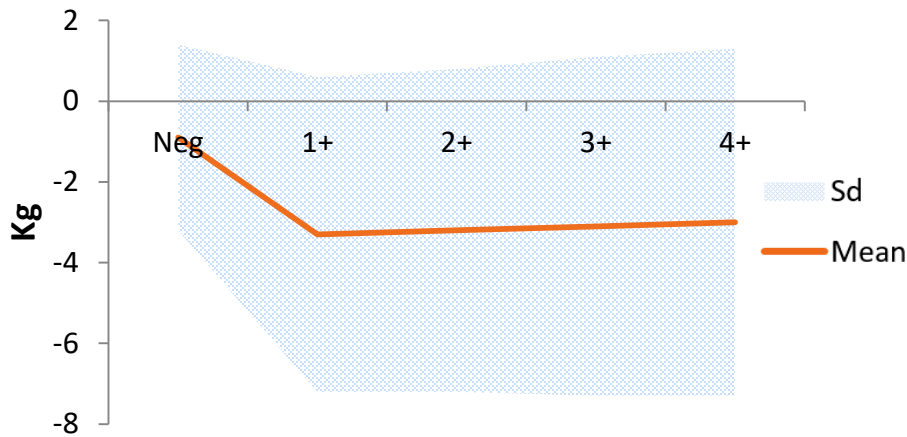
Results

- Negative n=10
 - 1+ n=26
 - 2+ n=33
 - 3+ n=75
 - 4+ n=37
-
- Baseline characteristics did not differ

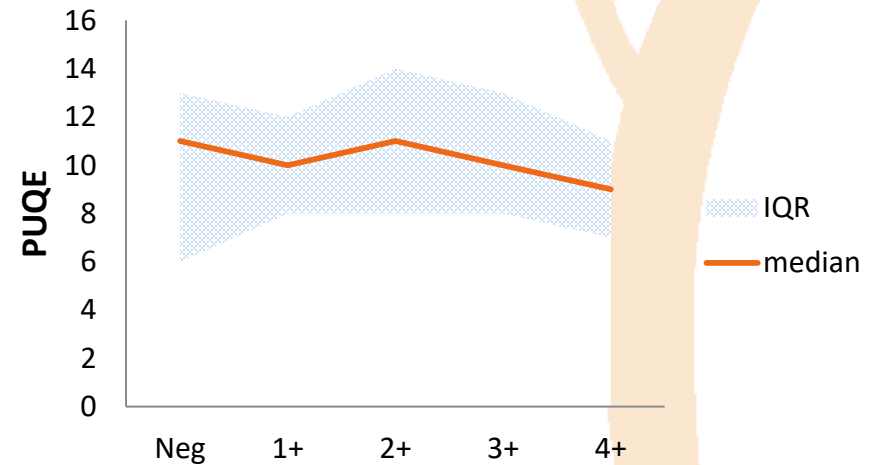


Results

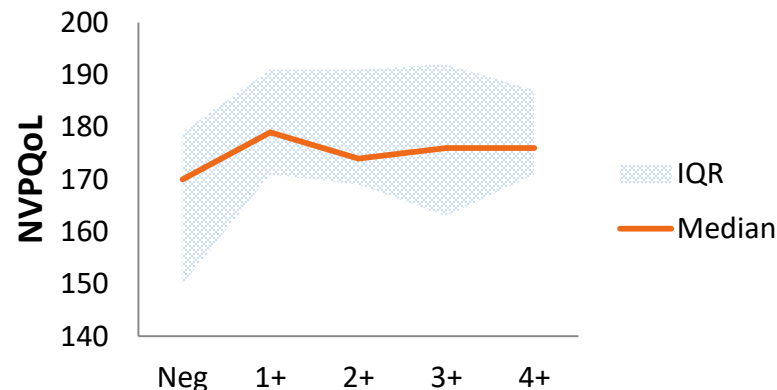
Weight gain/loss at admission



PUQE score at admission



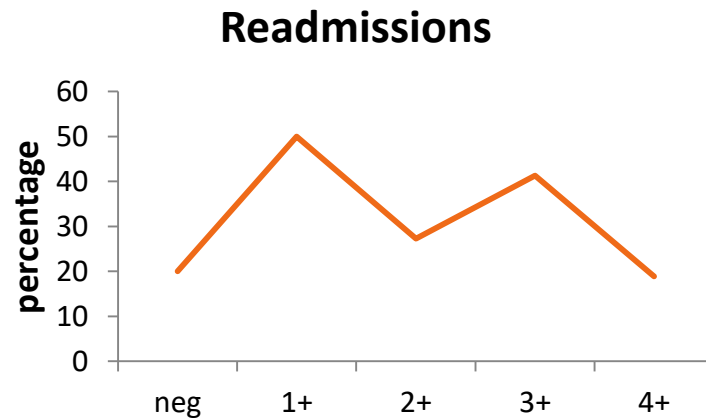
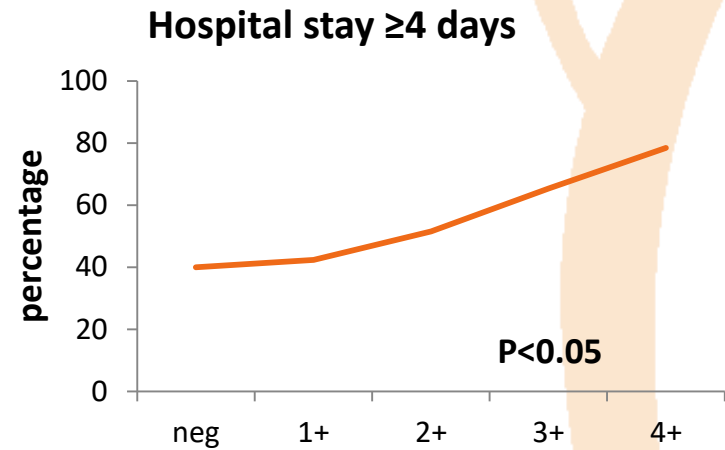
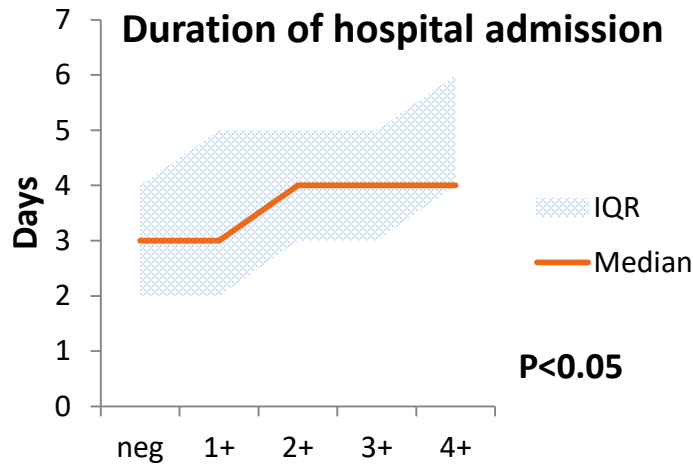
NVPQoL score at admission



Higher PUQE= more symptoms. Higher NVPQoL = lower quality of life



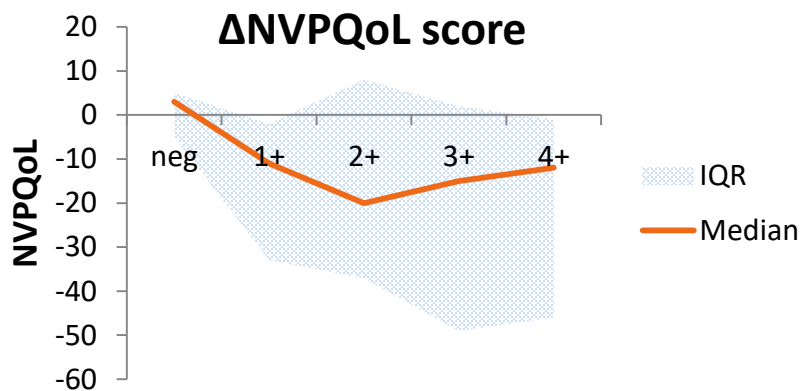
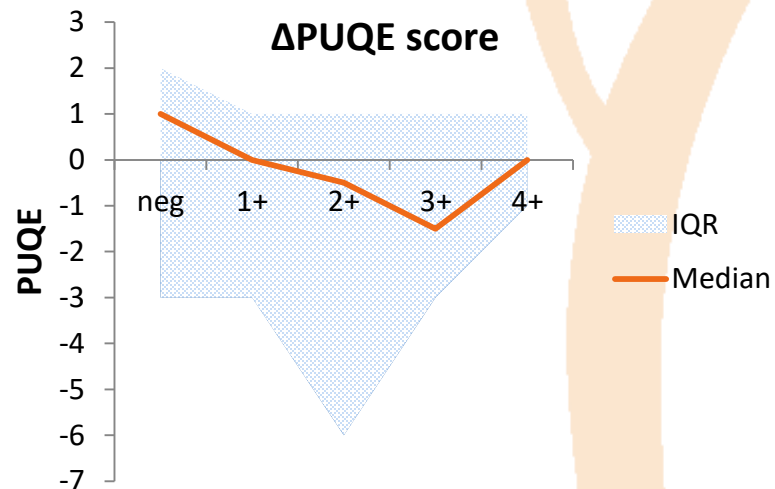
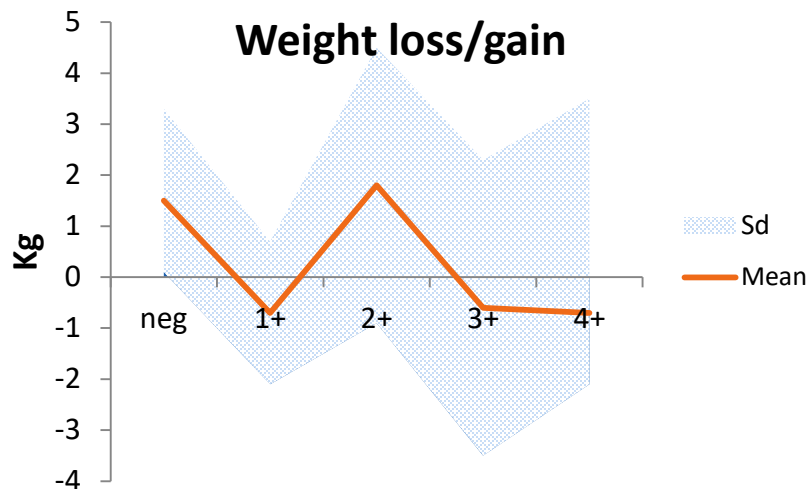
Results (2)





Results (3)

One week after admission



Higher PUQE= more symptoms. Higher NVPQoL = lower quality of life



Ketonuria and clinical management

Statement about ketonuria in the management of HG in local protocol	Number of hospitals
1. Do not mention ketonuria in local protocol.	2
2. Ketonuria should be measured every day. Not mentioned as a criteria for hospital discharge.	11
3. Degree of ketonuria is one of the discharge criteria.	6



Conclusion

- Higher degree of ketonuria was not associated:
 - Maternal weight loss
 - Symptom severity
 - Not predictive for symptom severity after 1 week
- Higher degree of ketonuria was associated:
 - Longer duration of hospital admission



Conclusion (2)

Our data does not support the use of ketonuria as a predictor for disease severity.

Where women hospitalised longer because of ketonuria?

Limitations:

- Different protocols
- No ketonuria at discharge



Acknowledgements

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- MOTHER study group
- NVOG Consortium
- Participating hospitals

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Results

	Negative n=10	1+ n=26	2+ n=33	3+ n=75	4+ n=37	β/OR (95% CI)
Hospital stay						
Duration first admission (days)	3 (2 – 5)	3 (3 – 5)	4 (3 – 4)	4 (3 – 5)	4 (4 – 6)	0.46 (0.07, 0.85)
Hospital stay ≥4 days	40.0	42.3	51.5	65.3	78.4	1.61 (1.21, 2.12)
Readmission for HG	20.0	50.0	27.3	41.3	18.9	0.87 (0.66, 1.14)
Symptom severity at hospital admission						
Weight loss (kg)	-0.9 ± 2.3	-3.3 ± 3.9	-3.2 ± 4.0	-3.1 ± 4.2	-3.0 ± 4.3	-0.78 (-2.42, 0.86)
PUQE score	11 (6 – 13)	10 (8 – 12)	11 (8 – 14)	10 (8 – 13)	9 (7 – 11)	-0.28 (-0.81, 0.26)
PUQE score ≥13	28.6	13.3	36.8	25.0	12.5	0.88 (0.61, 1.28)
NVPQoL score	170(150 – 179)	179(171 – 191)	174(169 – 191)	176(163 – 192)	176(171 – 187)	1.23 (-2.62, 5.11)
HIS score	25.3 ± 4.7	28.1 ± 3.0	27.7 ± 4.2	28.1 ± 4.4	28.0 ± 3.0	0.40 (-0.22, 1.02)
Symptom severity 1 week after inclusion						
Weight gain/loss (kg)	-1.5±1.6	-0.7±1.4	+1.8±2.7	-0.6±2.9	+0.7±2.8	-8.0 (-20.0, 3.99)
PUQE score	1 (-3 – 8)	0 (-3 – 1)	-0.5 (-6 – 1)	-1.5 (-3 – 1)	0 (-1 – 1)	-0.34 (-1.10, 0.43)
NVPQoL score	3 (-5 – 5)	-11 (-33 – -2)	-20 (-37 – 7)	-15 (-49 – 2)	-12 (-46 – -1)	-5.0 (-11.2, 1.01)
HIS score	-1.8 ± 3.0	-1.3 ± 3.7	-1.4 ± 2.3	-3.1 ± 4.6	-3.3 ± 3.2	-0.63 (-1.42, 0.16)

Values are mean ± SD or median (IQR) for continues variables and % for dichotomous variables.



Results

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