

HYPOCALCEMIA

in the **immediate** postoperative period following MBS

hype or harm?

Athanasios G. Pantelis

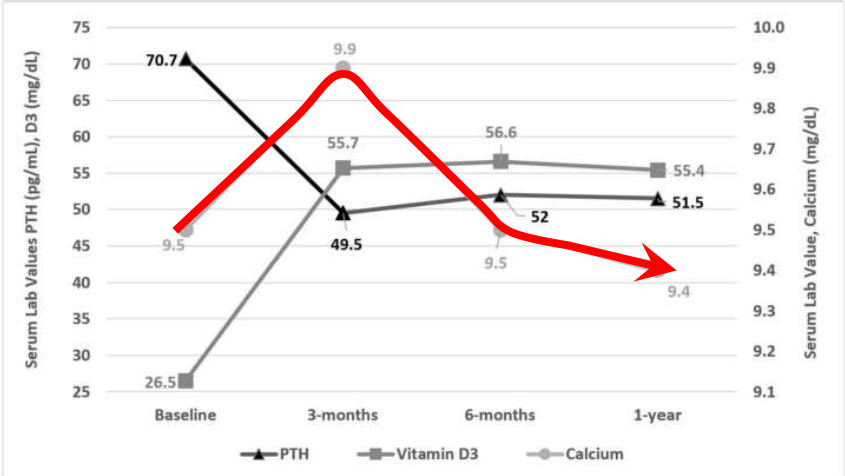
Greece



I have no potential conflict of interest to report.

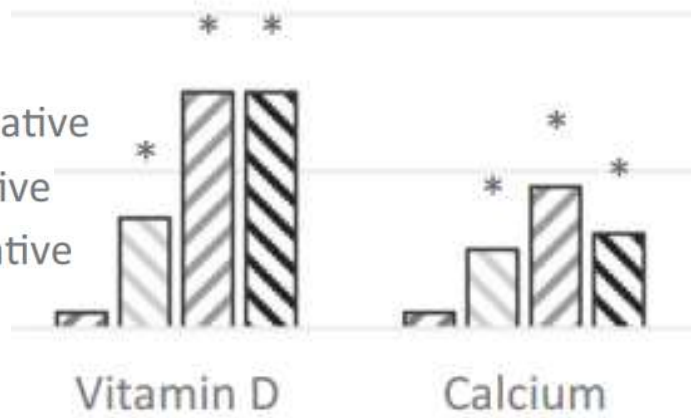


BACKGROUND

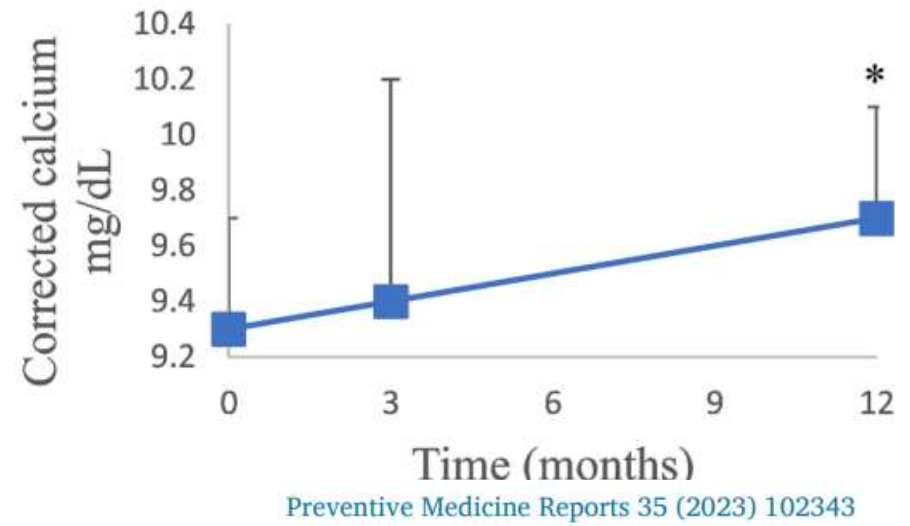
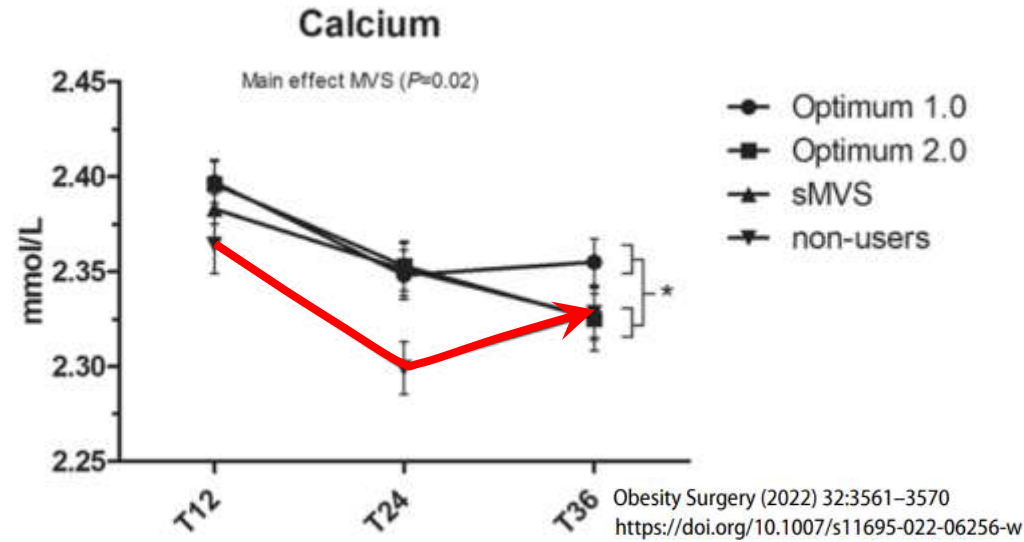


Surgical Endoscopy
<https://doi.org/10.1007/s00464-023-10218-3>

- Preoperative
- 1-3 months postoperative
- 6 months postoperative
- 12 months postoperative



European Journal of Clinical Nutrition; <https://doi.org/10.1038/s41430-023-01318-3>



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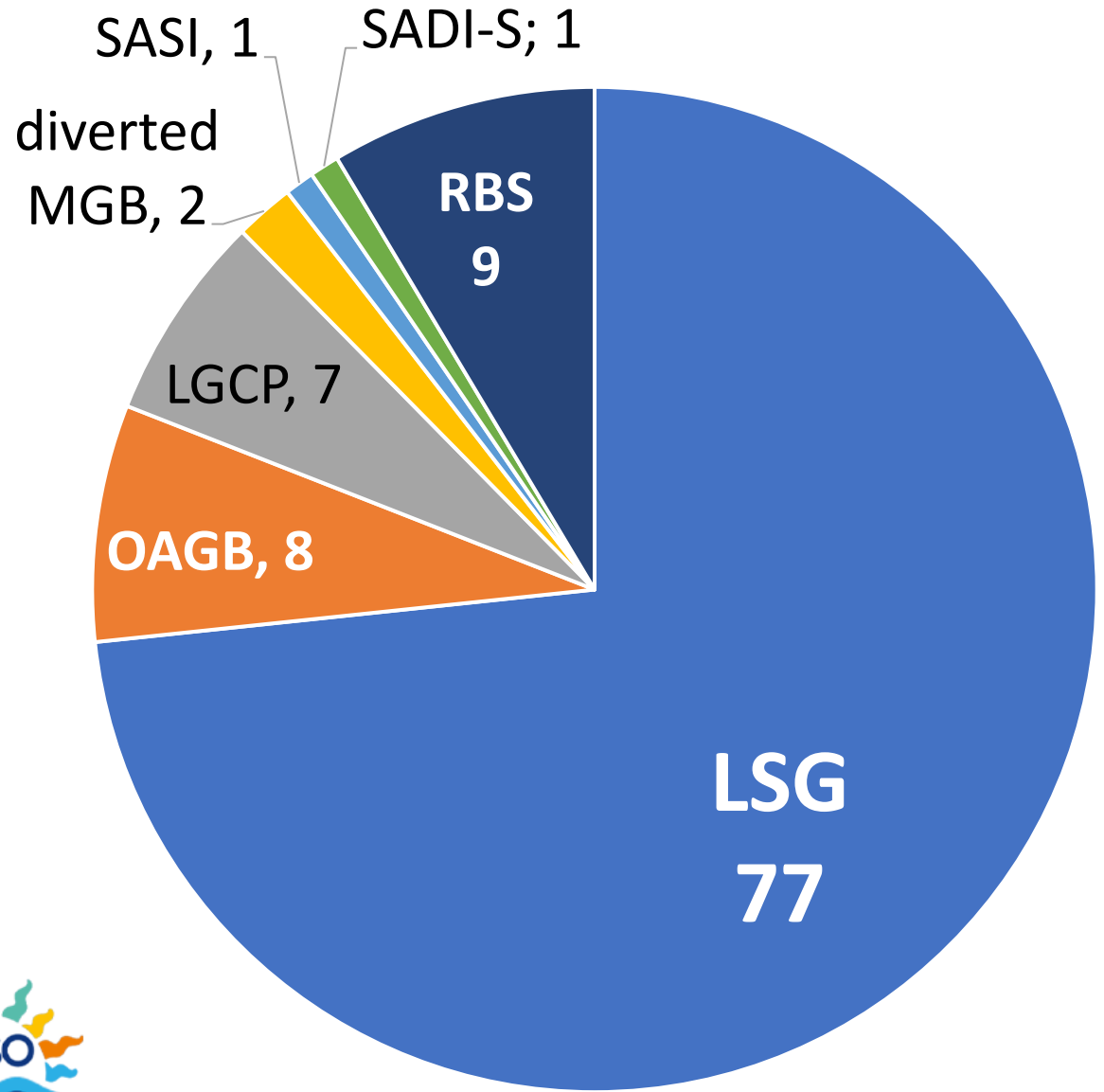
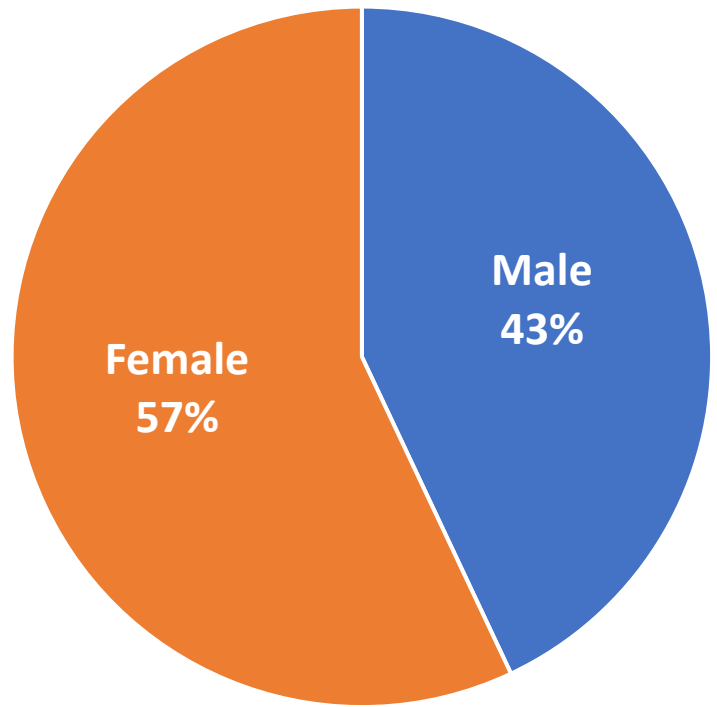
METHODS

- All MBS patients.
- Δt = Oct 2022 – Mar 2023.
- Prospective data collection

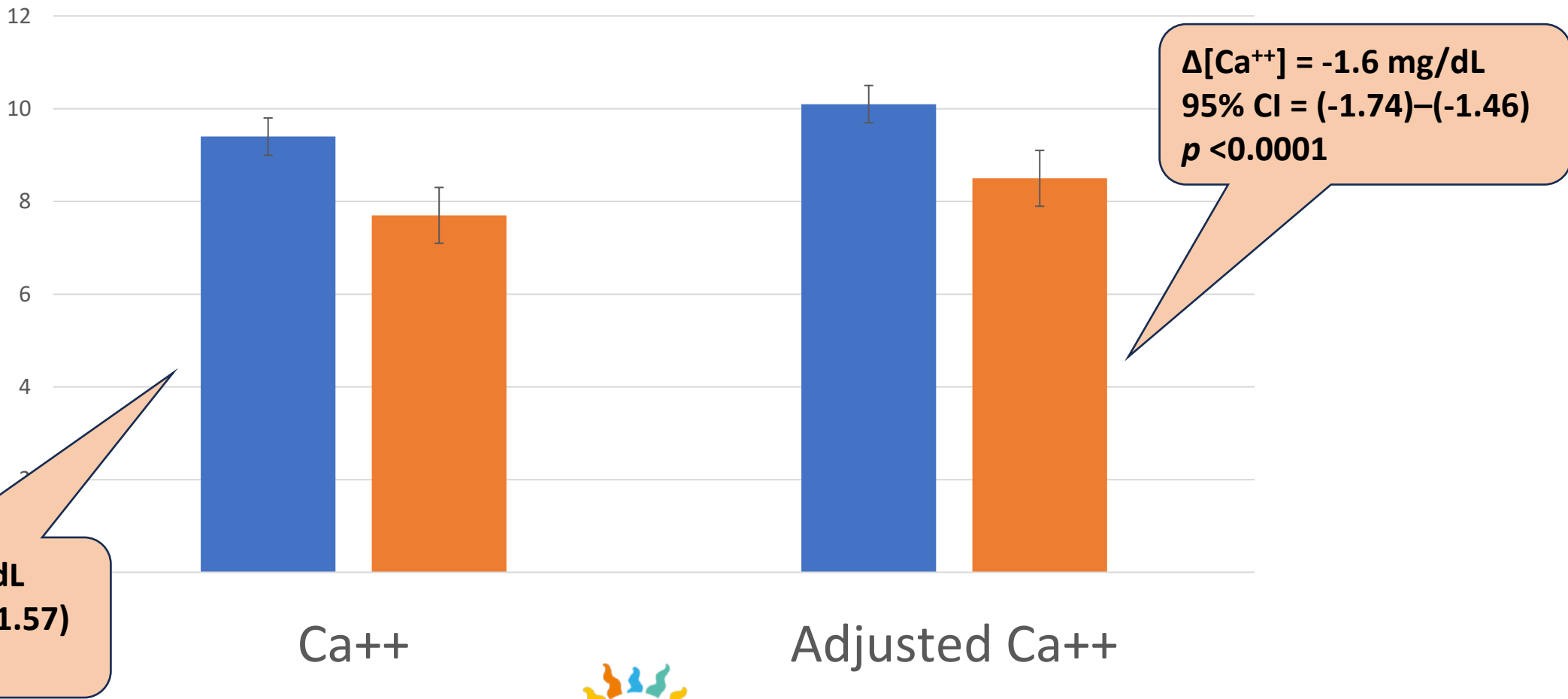
- Preop BMI.
- Type of surgery.
- Preop. serum Ca^{++} , albumin & corrected Ca^{++} (Payne formula).
- Postop. serum Ca^{++} , albumin & corrected Ca^{++} .
- Postop urine output.
- Bolus IVF.
- Bolus furosemide.

RESULTS

N = 105 { **Primary: 105**
Revisional: 9

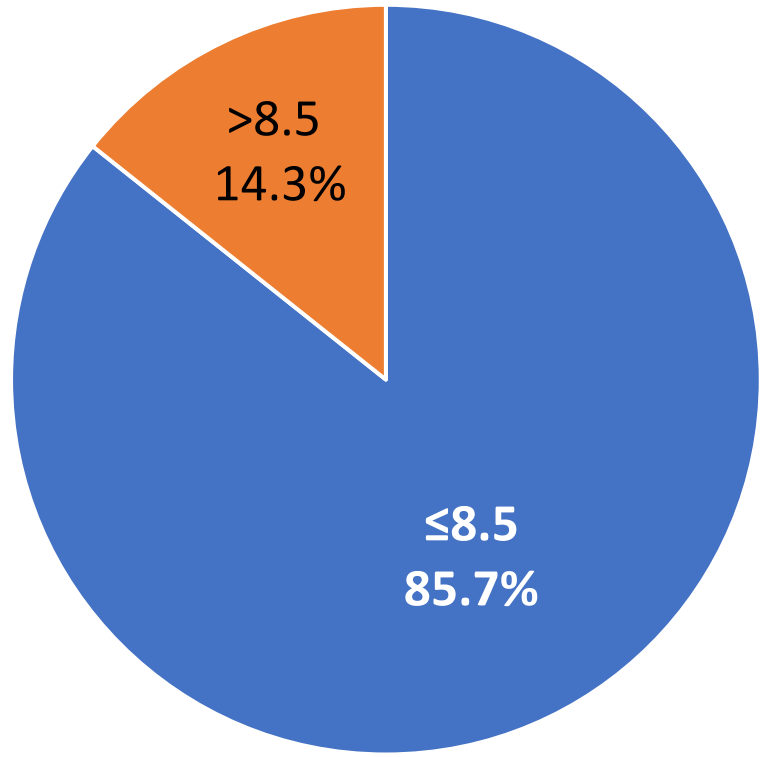


RESULTS

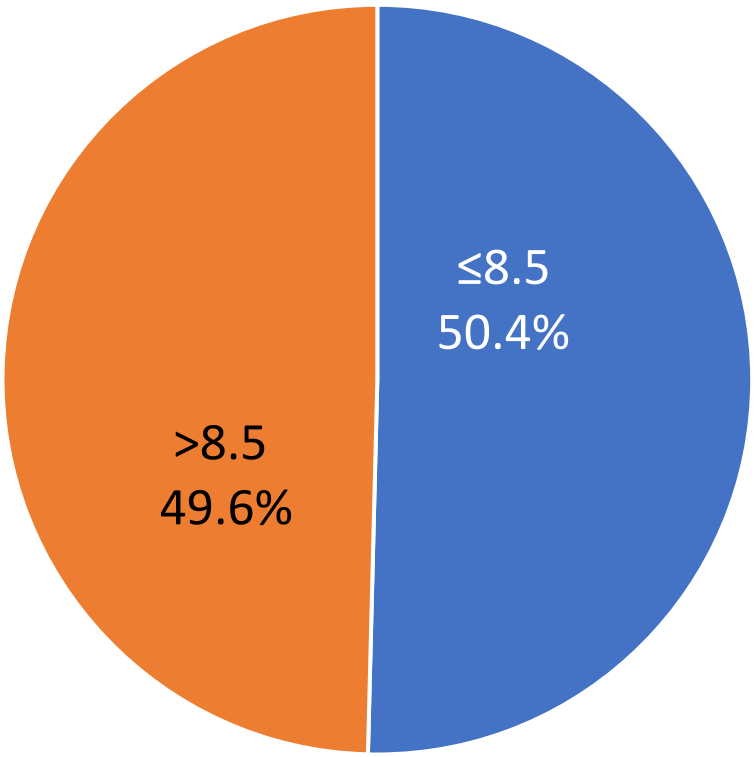


RESULTS

Postop Ca⁺⁺ <8.5 mg/dL



Adjusted postop Ca⁺⁺ <8.5 mg/dL

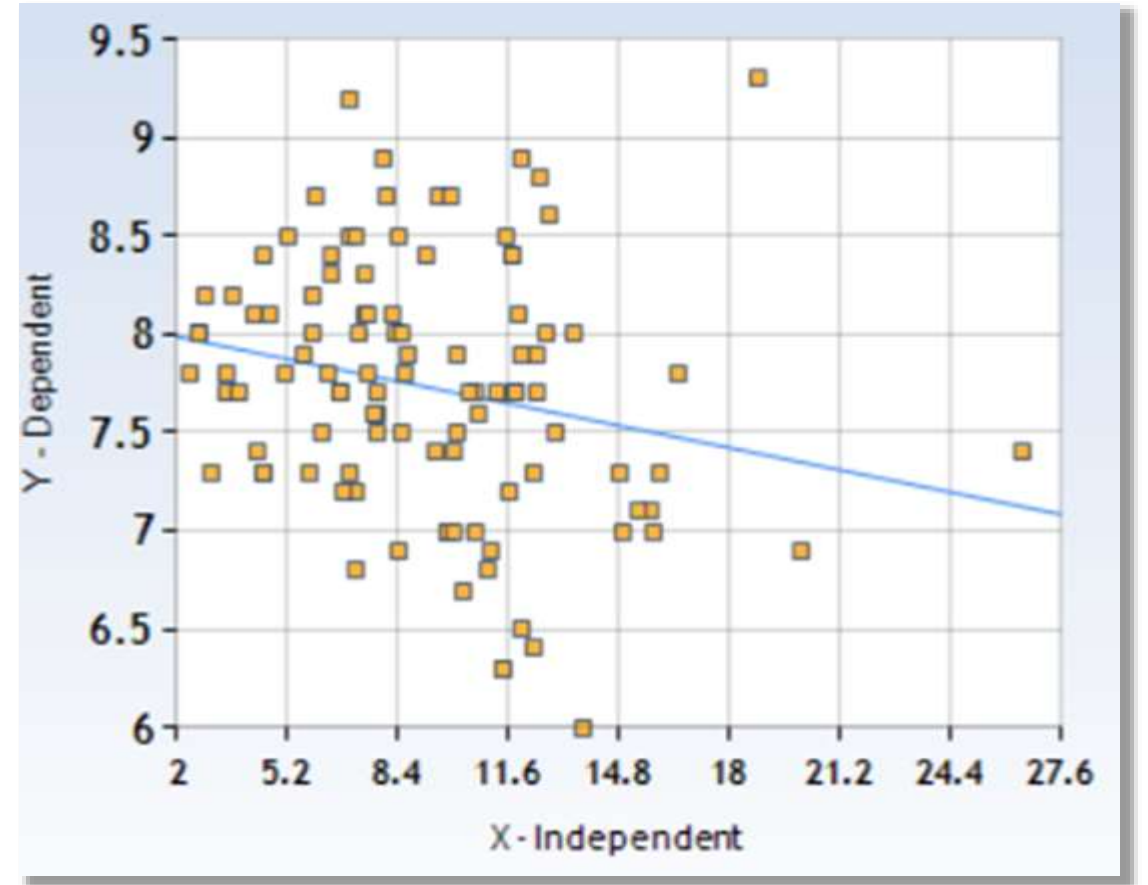


RESULTS

POTENTIAL CONFOUNDERS

- Urine output (UO).
- Mean UO in first 24h:
9.0 L \pm 3.9 (2.4 – 26.5).

- $r = -0.18$

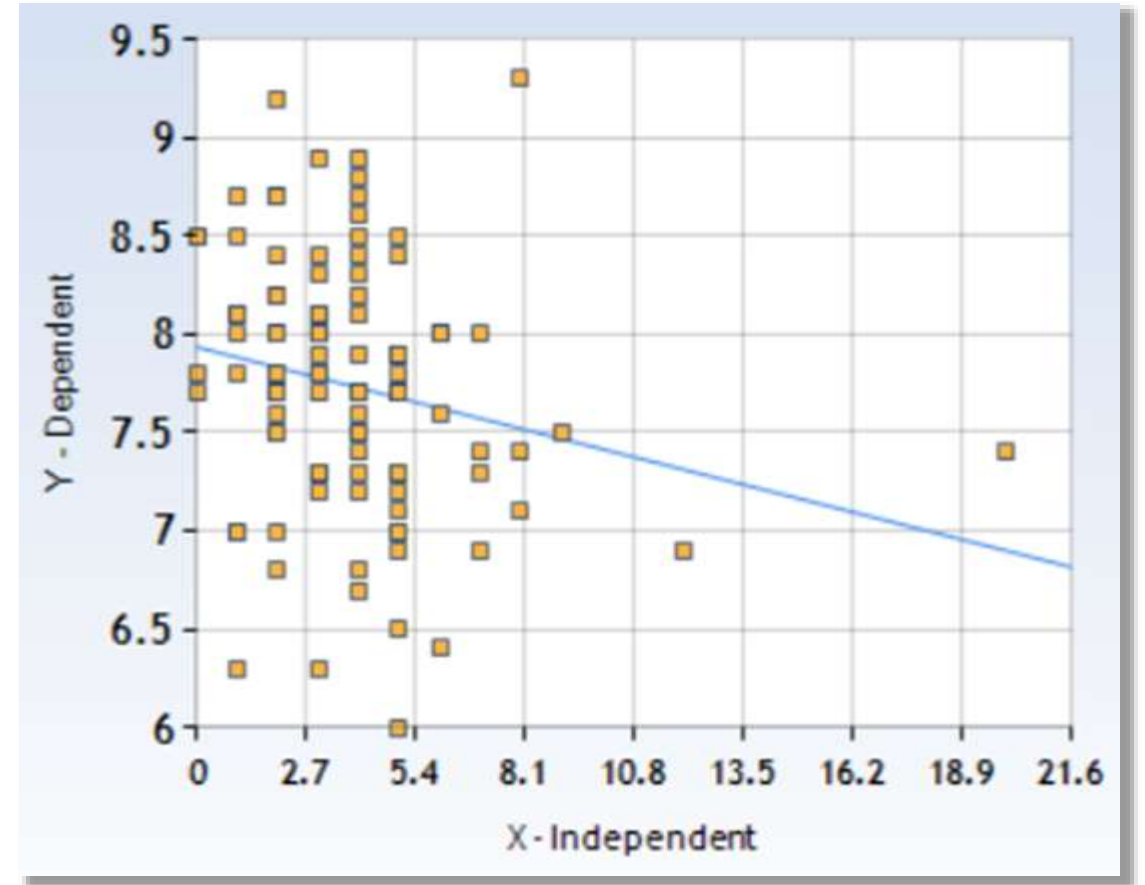


RESULTS

POTENTIAL CONFOUNDERS

- Bolus iv fluids (BIVF).
- Mean BIVF in first 24h:
3.8 L \pm 2.6 (0 – 20).

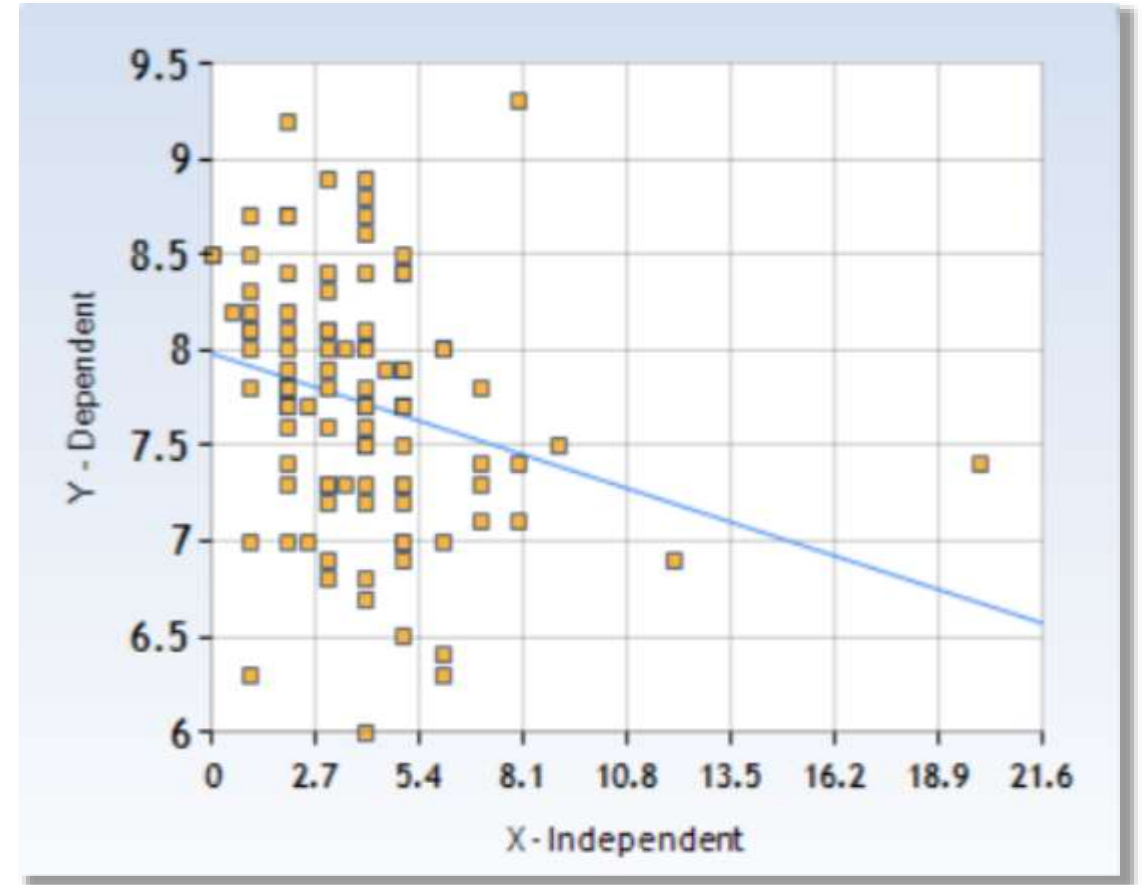
- $r = -0.26$



RESULTS

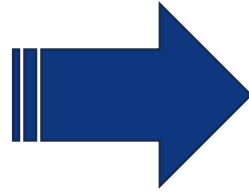
POTENTIAL CONFOUNDERS

- Bolus furosemide (BF).
- Mean BF in first 24h:
30 mg /2mL (0 – 140).
- **$r = -0.16$**



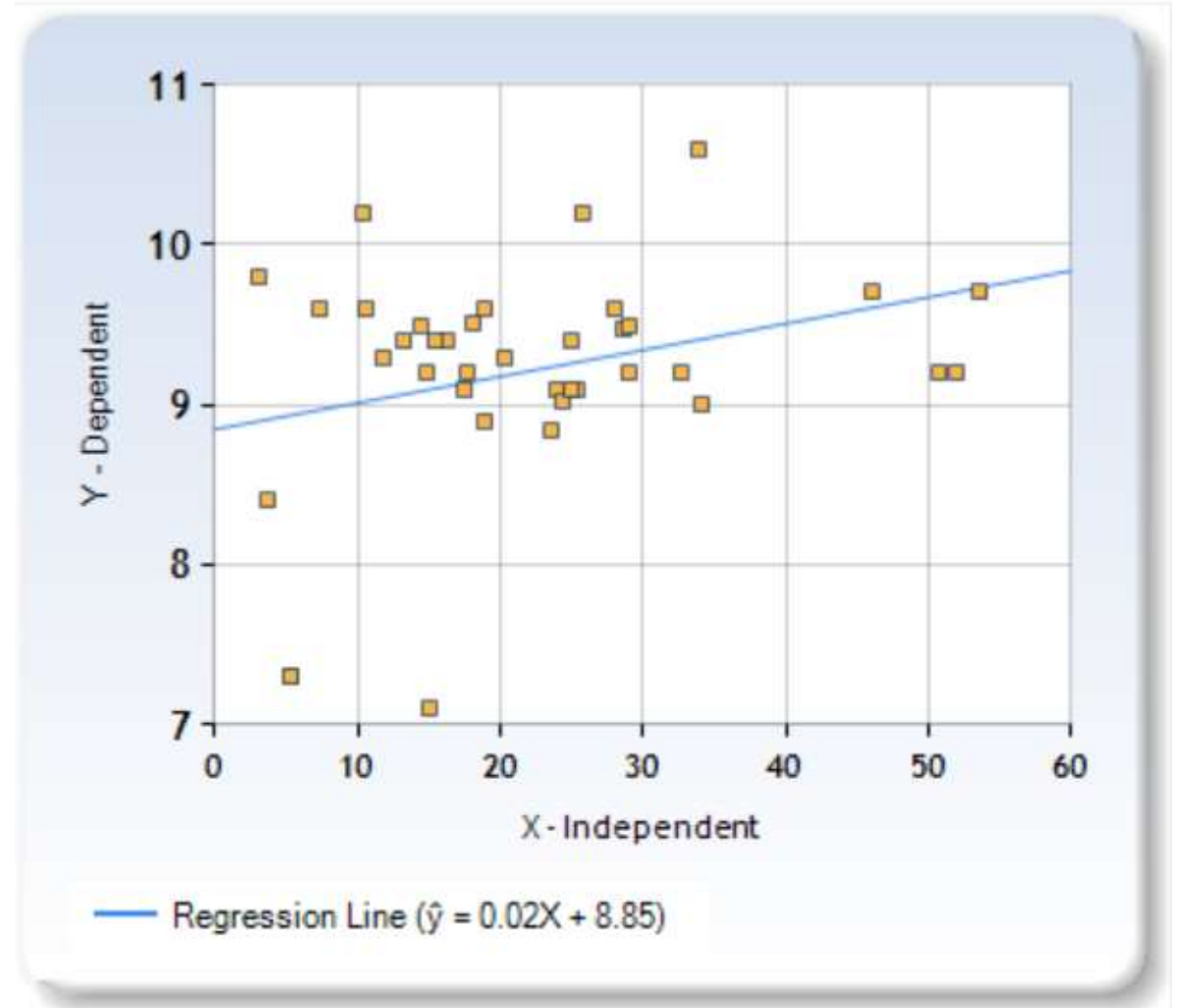
LIMITATIONS

1) Preop Vit-D available only for 38 patients.
(mean = 22.4 mg/dL)



2) PTH levels not measured.

3) Effects of laparoscopy & anesthesia on calcium levels.

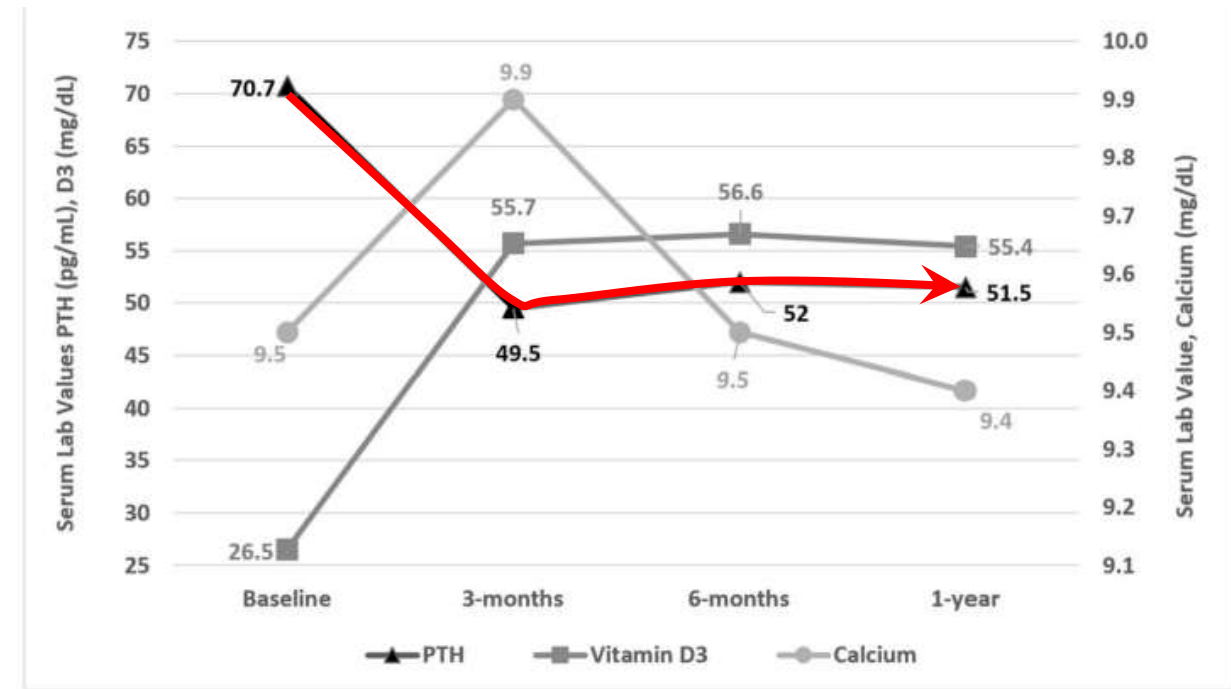


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Prevalence and risk factors for secondary hyperparathyroidism (SHPT) in patients undergoing bariatric surgery

Laura E. Fischer^{3,4} · Fernando Moreno-Garcia¹ · Rachel Tran¹ · Allison Harmon¹ · Cooper Little¹ · Grayson Domingue² · Kenneth Stewart³ · Fernando Mier Giraud^{3,4} · Rishi Thakral²



Surgical Endoscopy
<https://doi.org/10.1007/s00464-023-10218-3>

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> [J Clin Endocrinol Metab.](#) 1999 Aug;84(8):2654-8. doi: 10.1210/jcem.84.8.5889.

Hypocalcemia induced during major and minor abdominal surgery in humans

[R Lepage](#)¹, [G Légaré](#), [C Racicot](#), [J H Brossard](#), [R Lapointe](#), [M Dagenais](#), [P D'Amour](#)

Affiliations + expand

PMID: 10443655 DOI: 10.1210/jcem.84.8.5889

Randomized Controlled Trial > [Vet Anaesth Analg.](#) 2007 Mar;34(2):89-98.

doi: 10.1111/j.1467-2995.2006.00300.x.

The effects of surgery and anesthesia on blood magnesium and calcium concentrations in canine and feline patients

[Benjamin M Brainard](#)¹, [Vicki L Campbell](#), [Kenneth J Drobotz](#), [Sandra Z Perkowski](#)

Affiliations + expand

PMID: 17316389 DOI: 10.1111/j.1467-2995.2006.00300.x

CONCLUSION

- **Hypocalcemia** is a real problem in the immediate post-MBS period.
- $\text{Ca}^{++} < 8.5 = 85.7\%$.
- Adjusted $\text{Ca}^{++} < 8.5 = 50.4\%$
- Weak correlation with urine output, IVF, furosemide.
- Mechanisms remain elusive.



Thank you!

Patalpani waterfall,
Madhya Pradesh, India