

# INTENTIONAL MASSIVE OVERDOSE WITH ASPART AND GLARGINE INSULIN: A CASE REPORT

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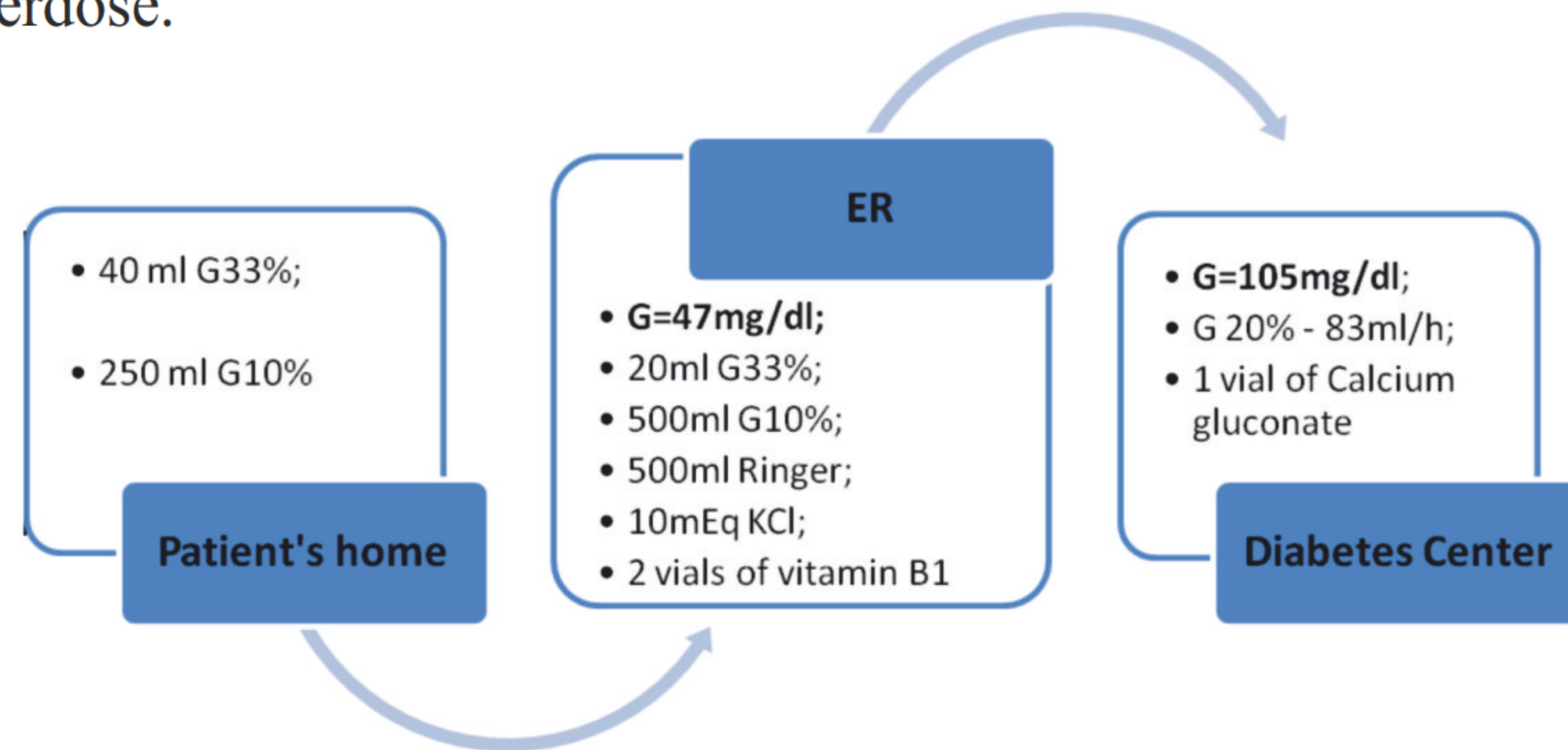
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Intentional insulin overdose in diabetic patients is a rare critical situation, the experience with insulin analogues being limited.<sup>1</sup> The severity is due to numerous neurological complications<sup>2</sup>, electrolyte disturbances<sup>3</sup>, liver<sup>4</sup> and lung damage<sup>5</sup> or death.

A 65-year old male, with significant cardiac and pulmonary pathology, diagnosed with type 2 diabetes since 1996 and treated with glargine (70U/day) and aspart (68U/day) insulin is admitted to our center via ER (emergency room) after an episode of severe hypoglycemia after administration of 750U aspart insulin and 280U glargine insulin. He arrived in the ER 3 hours after overdose.



At admission: altered general status, BP=150/70mmHg, Pulse=100b/min, dry skin, clubbed fingers, multiple injection sites across his abdomen, acanthosis nigricans on the right elbow, pityriasis versicolor and reddish-brown rounded lesions over the trunk, buttocks and proximal extremities.

Initial profile	Overdose profile
Total dose/day=138 IU	Total dose=1030 IU
Dose/kgbody/day=1.12 IU	Dose/kgbody=8.37 IU
Dose/kgbody/day (glargine)=0.57 IU	Dose/kgbody (glargine)=2.27 IU
Dose/kgbody/day (aspart)=0.55 IU	Dose/kgbody (aspart)=6.09 IU

Labs exams revealed: hypertriglyceridemia, hypocalcemia, slightly elevated creatinine, glycosuria (50mg/dl), A1c=7.9%. The glucose infusion rhythm and concentration was adjusted according to the glycemic profile while maintaining values around 150mg/dl, with a total duration of infusion of 61 hours. Electrolytes, phosphorus and magnesium remained within normal limits during hospitalization. To increase the insulin clearance i.v. Furosemide was given for 6 days with diuresis monitoring.

## Psychological and psychiatric evaluation

- depression
- emotional unstable personality disorder
- outpatient psychiatric follow-up
- cognitive-behavioral therapy

## Dermatology consult

- confirmed Pityriasis versicolor
- diagnosed Pityriasis lichenoides cronicus
- endocrinology consult
- assessment of pituitary function

In the 5<sup>th</sup> day of hospitalization, we decided the conversion to oral therapy with Metformin 2g/day and Sitagliptin 100mg/day, with a good glycemic control.

## Conclusions

Insulin overdose:

- requires intensive and prolonged glycemic monitoring;
- involves life-threatening electrolyte disturbances;
- the dose is not correlated with the severity of hypoglycemia.

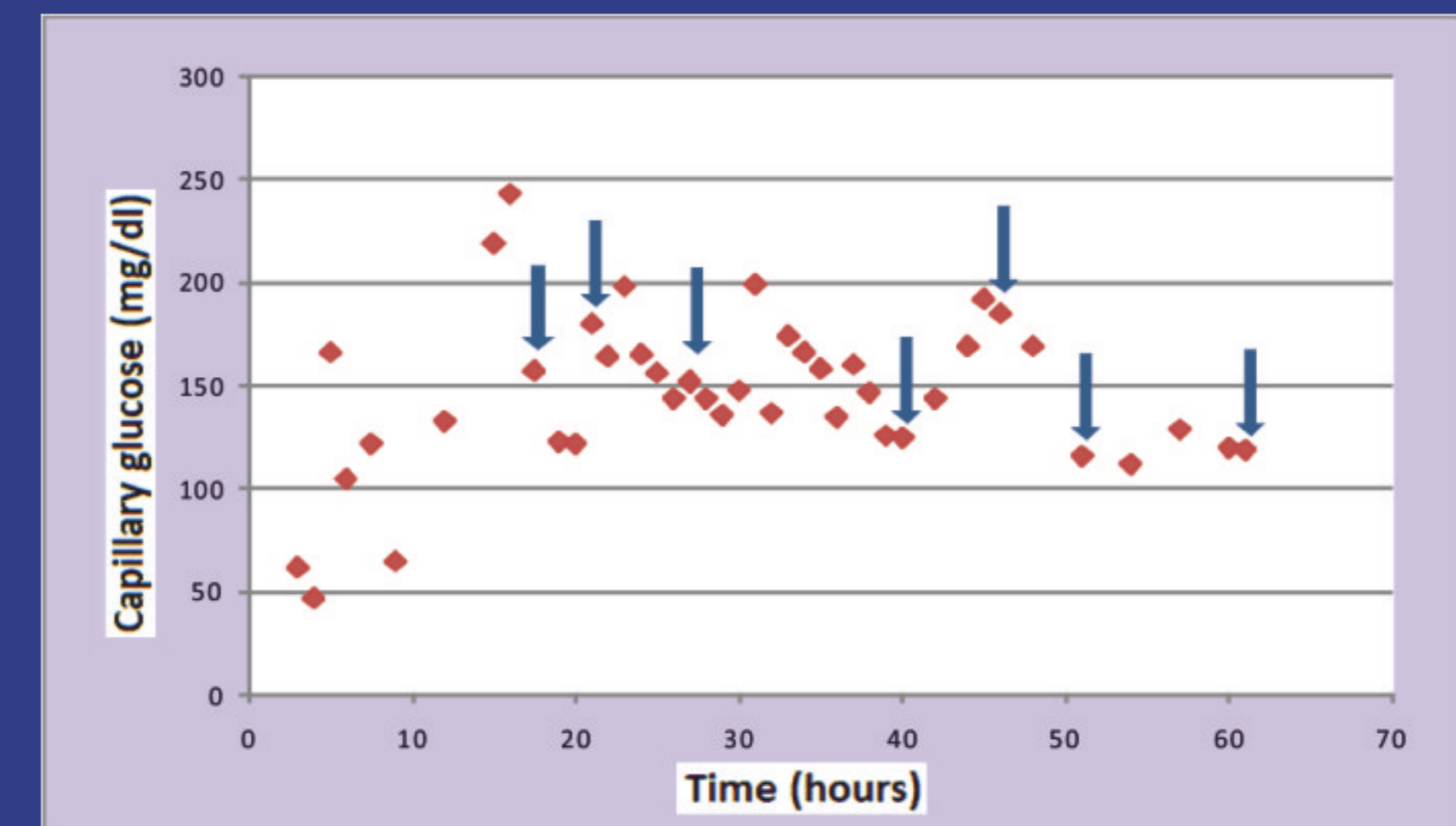


Fig. 1: Evolution of capillary glucose level during glucose infusion (meal times are indicated by arrows)

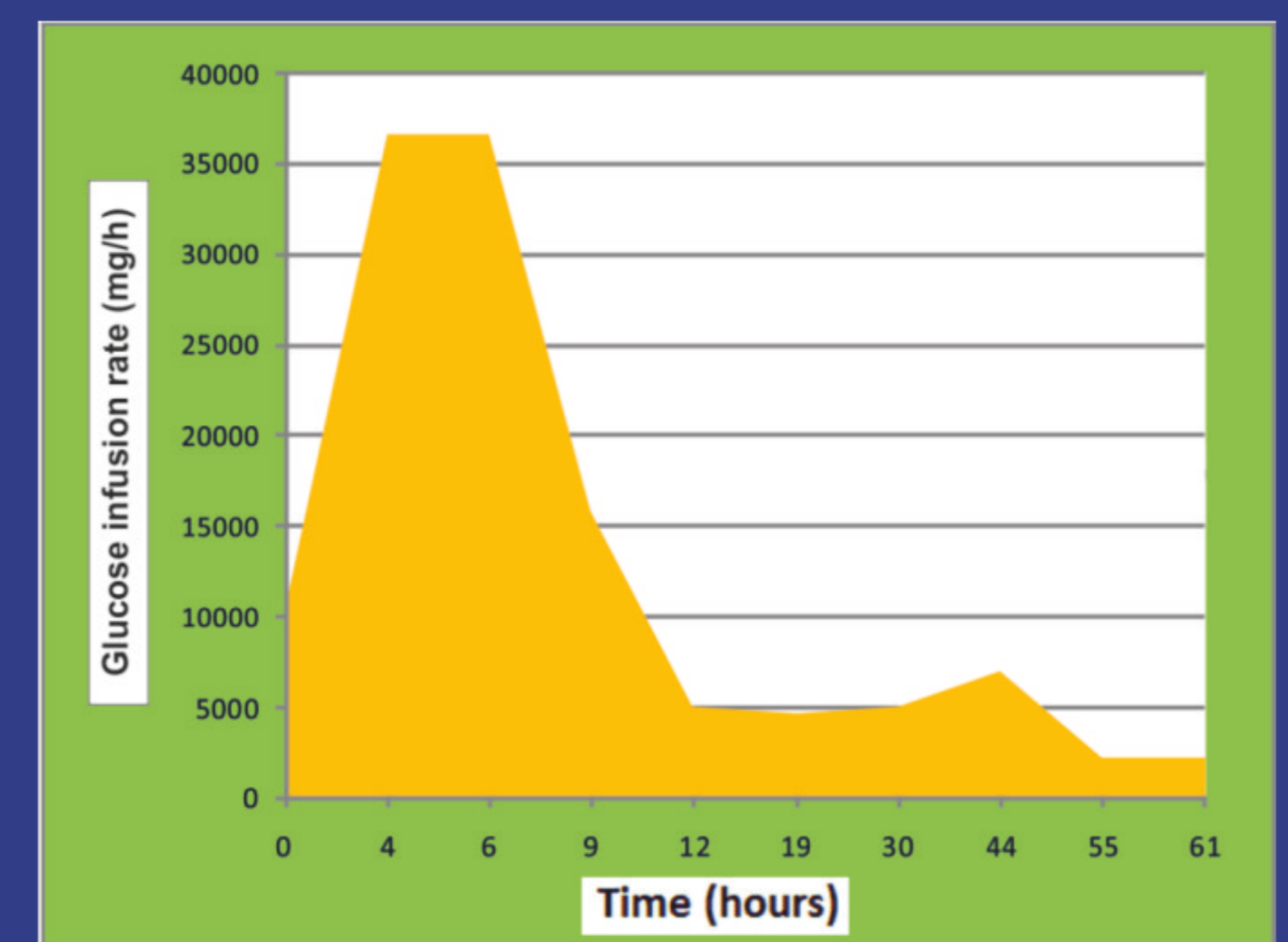


Fig. 2: Glucose infusion rate from insulin overdose (time 0)

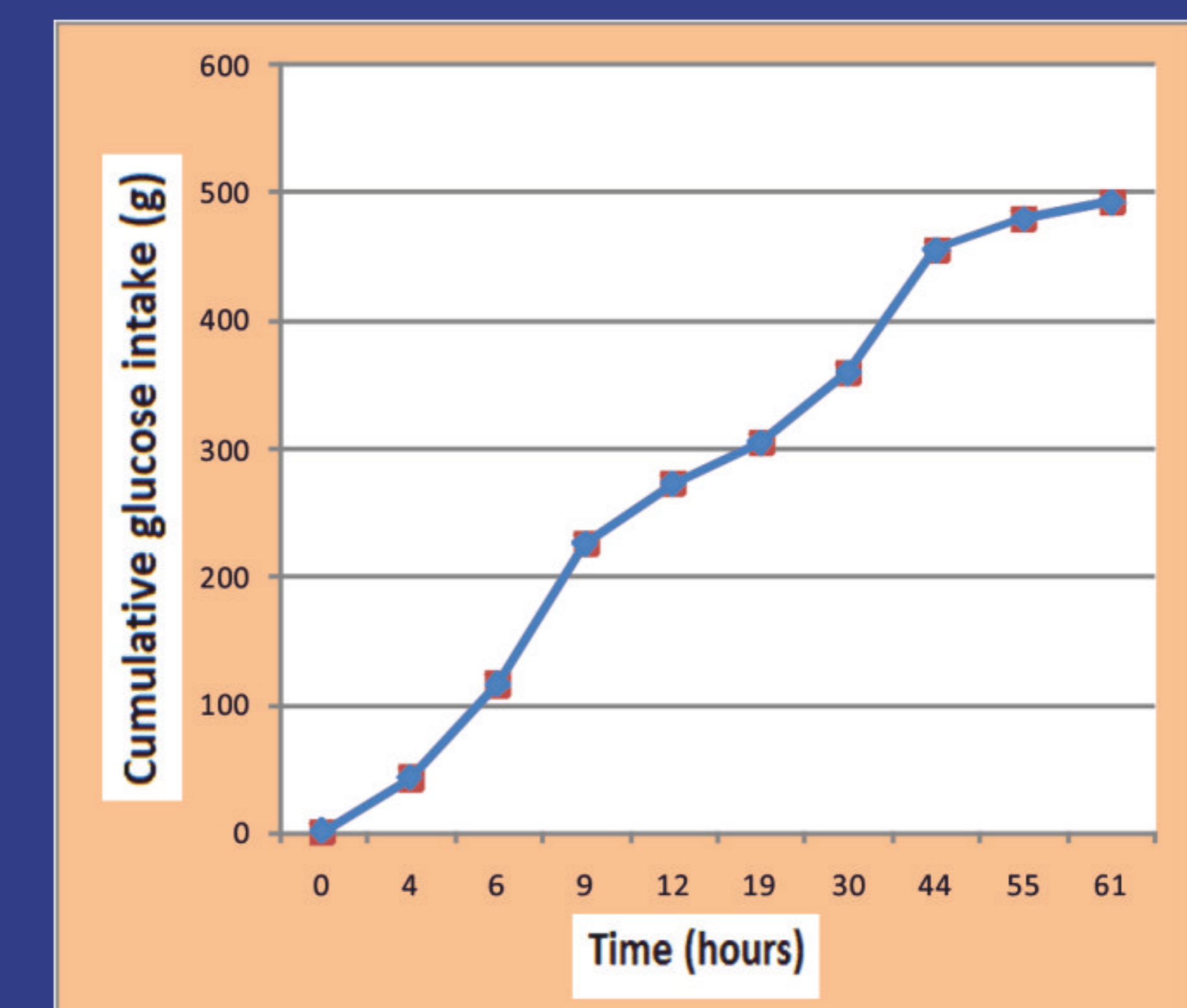


Fig. 3: Cumulative i.v. glucose administered since the discovery of insulin

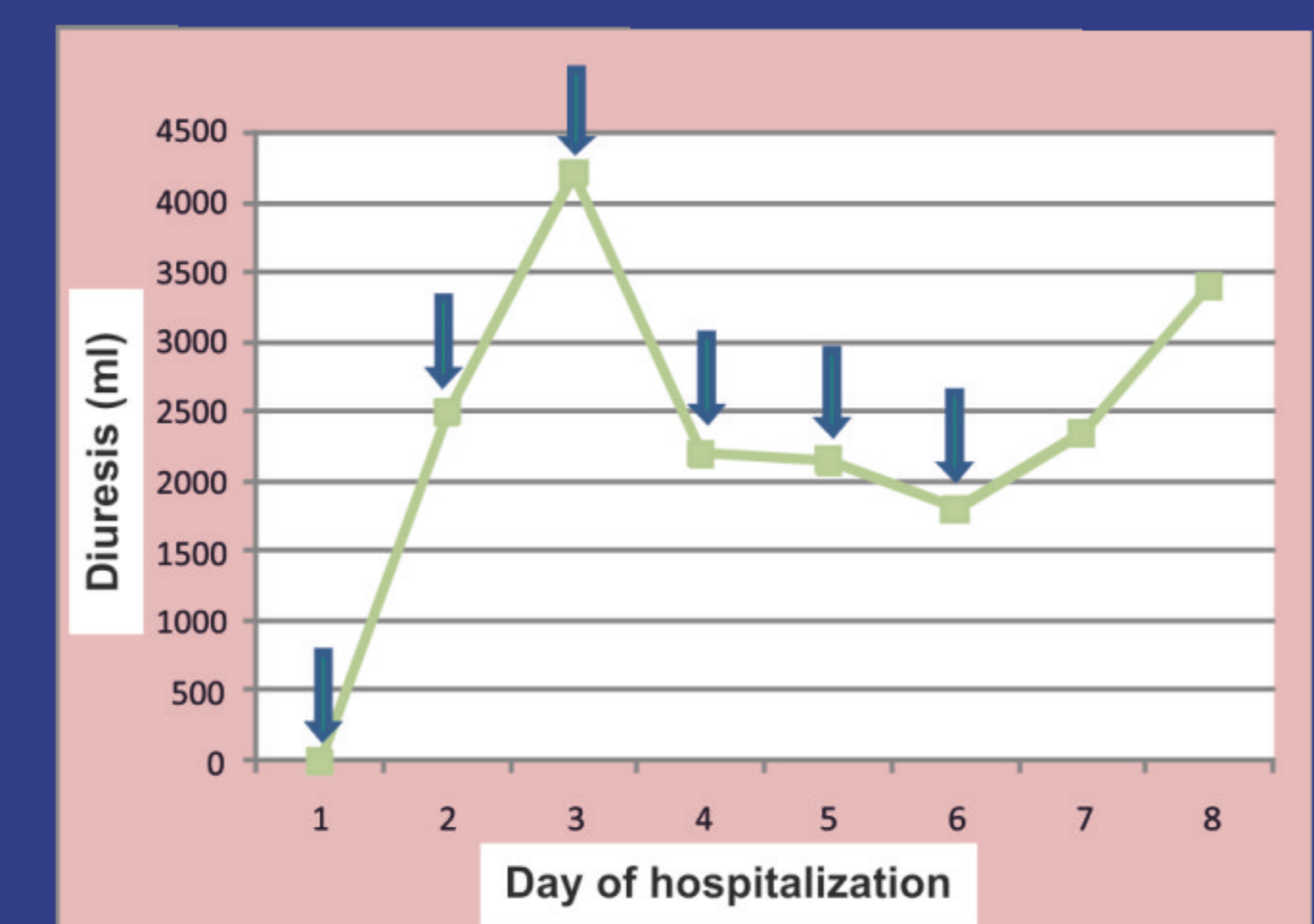


Fig. 4: Diuresis evolution during hospitalization (i.v. Furosemide is marked by arrows)

## References:

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