



Remimazolam Use During Neurologic Procedures: A Multicenter Experience

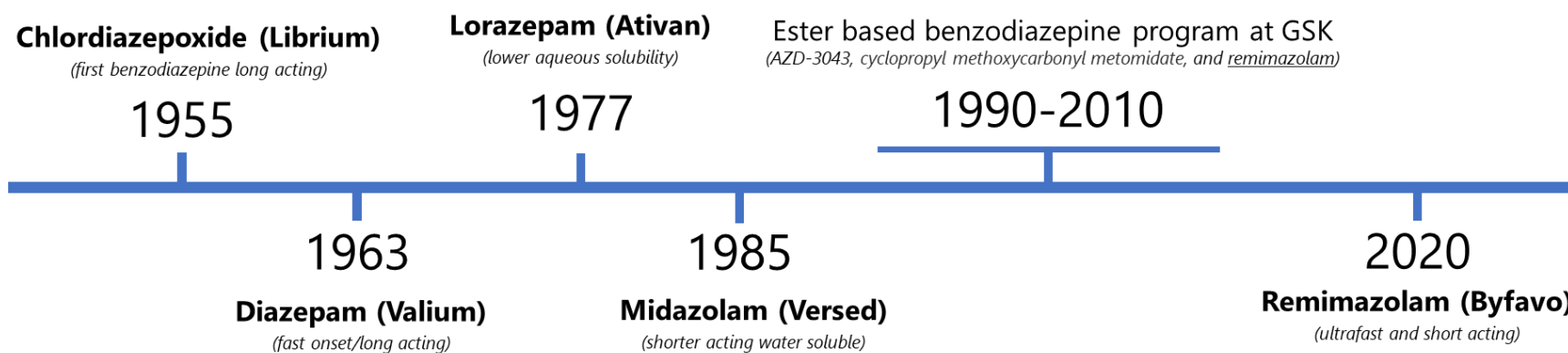
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OBJECTIVES

- We report findings from a large cohort across several Mayo hospitals.
- We review all remimazolam administrations in neurosurgical and neuroradiological procedures and highlight associated patient demographics, procedural and anesthetic characteristics, recovery profile and explore adverse events.

BACKGROUND & PHARMACOLOGY



- Novel **fast** onset, **short-acting**, **reversible** benzodiazepine
- FDA approved for **procedural sedation** in 2020
may also be used for **general anesthesia**
- Appealing cardiopulmonary **safety** profile
- Dosing **independent** of organ dysfunction, ASA, age

Remimazolam PK/PD QUICK REFERENCE

Byfavo™

Class / MOA GABA_A agonist
no analgesic properties

Peak onset 1-4 min
Sedation Time: 11-14min

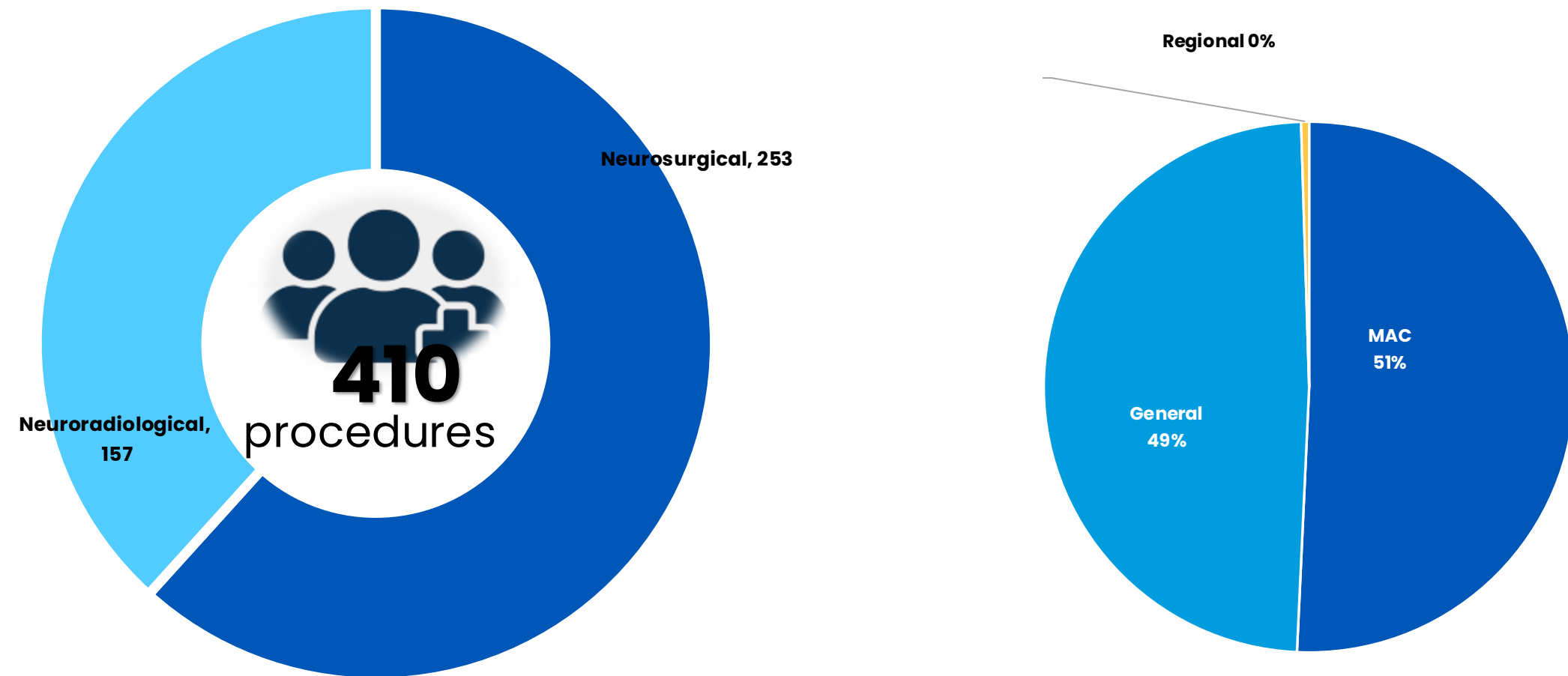
Elimination t_{1/2}: 5-10 min
Terminal t_{1/2} 37-53 min
Context sensitive t_{1/2} 8 min
3x faster **clearance** than midazolam

Dosing
Sedation: 1-5mg IV q2min
GA: 0.2-0.4mg/kg induction / 1-2mg/kg/hr maintenance

Metabolism Liver tissue esterases
CES-1 → CNS 7045
Distribution 0.76-0.98L/kg
>91% albumin bound

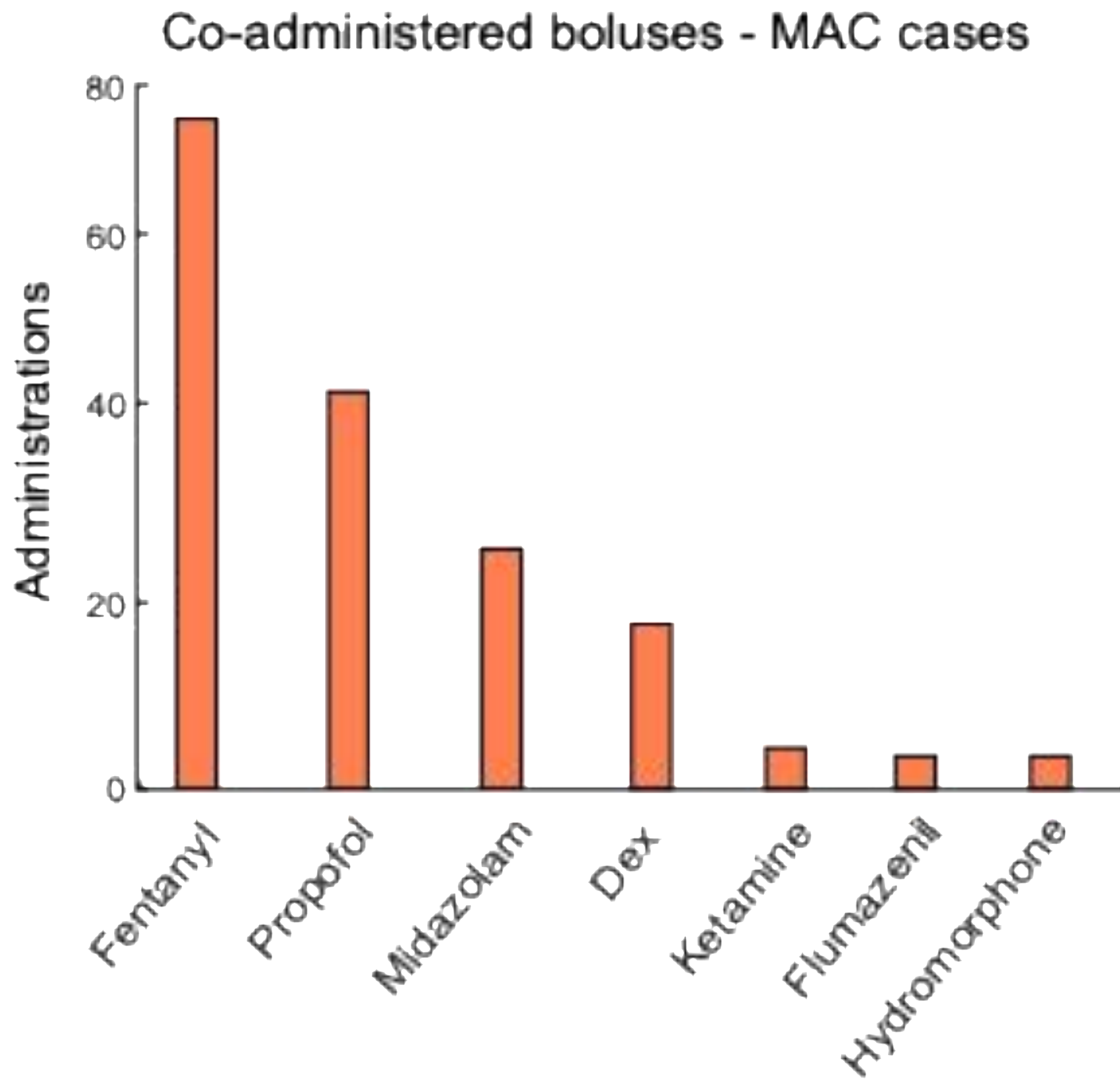
Route IV w/ poor oral bioavailability
Potency ≈ 2:1 remimaz: midazolam

RESULTS

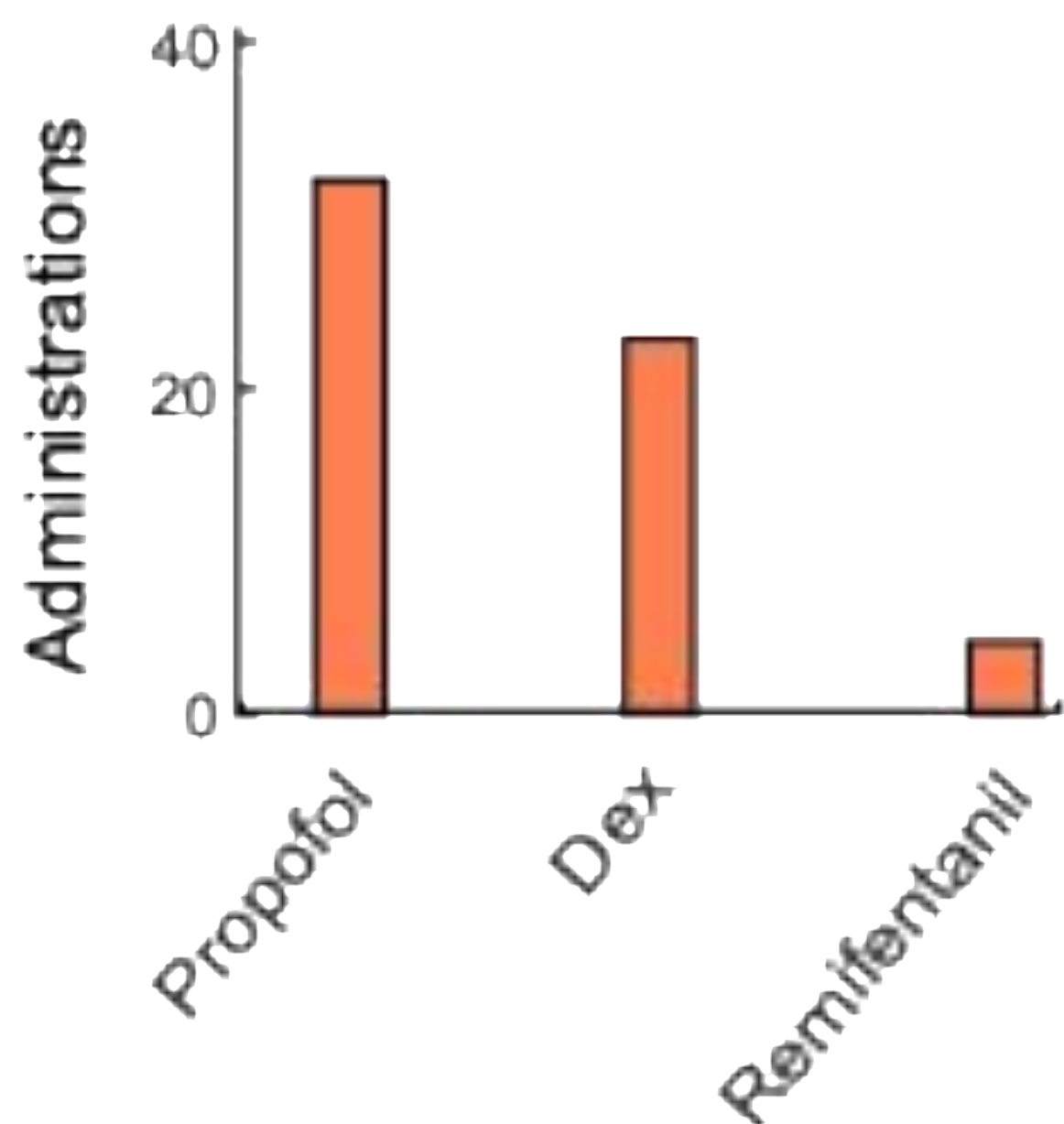


Characteristic	Value
Age, y (± SD)	61 (± 18.3)
BMI (± SD)	28.6 (± 6.5)
Sex	M: 222 (54%) F: 188 (46%)
ASA PS Classification (%)	1: 4 (0.01%) 2: 85 (20.7%) 3: 277 (67.6%) 4: 44 (10.7%)

Total	RTB RASS	Anesthesia Length	PACU LOS
Mean (STD)	43.4 (56.9)	133.7 (95.2)	73.5 (62.3)
Min/Max	0/306	17/658	1/380
OR	RTB RASS	Anesthesia Length	PACU LOS
Mean (STD)	48.6 (59.6)	158.4 (103.8)	73.7 (63.7)
Min/Max	0/306	17/658	1/380
IR	RTB RASS	Anesthesia Length	PACU LOS
Mean (STD)	32.5 (49.2)	93.8 (61.4)	73.1 (58.2)
Min/Max	0/228	22/522	6/295



Co-administered infusions - MAC cases



Drug (Bolus)	Dose (Mean ± SD)
Fentanyl	76.54 ± 48.79 mcg
Propofol	69.38 ± 48.43 mg
Midazolam	1.91 ± 0.38 mg
Dex	28.55 ± 19.27 mcg
Ketamine	28.0 ± 23.87 mg
Flumazenil	0.2 ± 0.0 mg
Hydromorphone	0.65 ± 0.38 mg

Drug (Infusion)	Dose (Mean ± SD)
Propofol	222.7 ± 163.1 mg
Dex	54.73 ± 46.28 mcg
Remifentanyl	208.14 ± 140.66 mcg

CONCLUSIONS

- Remimazolam was used across a wide range of clinical scenarios. It appears to be a preferred sedative hypnotic among sicker patients (ASA ≥ 3). This is likely due to its fast recovery times and favorable cardiopulmonary profile.
- All deaths occurring within 6 hours following remimazolam administration were unlikely to be due to the medication.
- Additional work, including prospective trials, are needed to validate these findings

REFERENCES

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