ESC Guidelines

Heart failure update 2008

For internal training purpose.

European Heart Journal,
doi: 10.1093/eurheart/ehn309

European Journal of Heart Failure
doi: 10.1016/j.ejheart.2008.08.005

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Agenda

- **Introduction**
- Classes of recommendations
- Level of evidence
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In the new ESC CHF guidelines there are four revised recommendations related to CRM device therapy.

- CRT-D recommended as routine therapy in heart failure patients to reduce mortality and morbidity
  Class I – Level of evidence A *(previously Level of evidence B)*
  -NYHA III-IV class
  -OPT, LVEF≤35%
  -QRS≥120 ms
- CRT-P
  Class IIb Level C *(previously in NYHA III-IV)*
  -Concomitant indication for permanent pacing in NYHA II-IV
  -LVEF≤35% or LV dilatation
- DDD-pacemakers
  Class IIb Level C *(first time recommended)*
  -Heart failure and sinus rhythm
- Remote monitoring
  Class IIa Level of evidence C *(first time recommended)*

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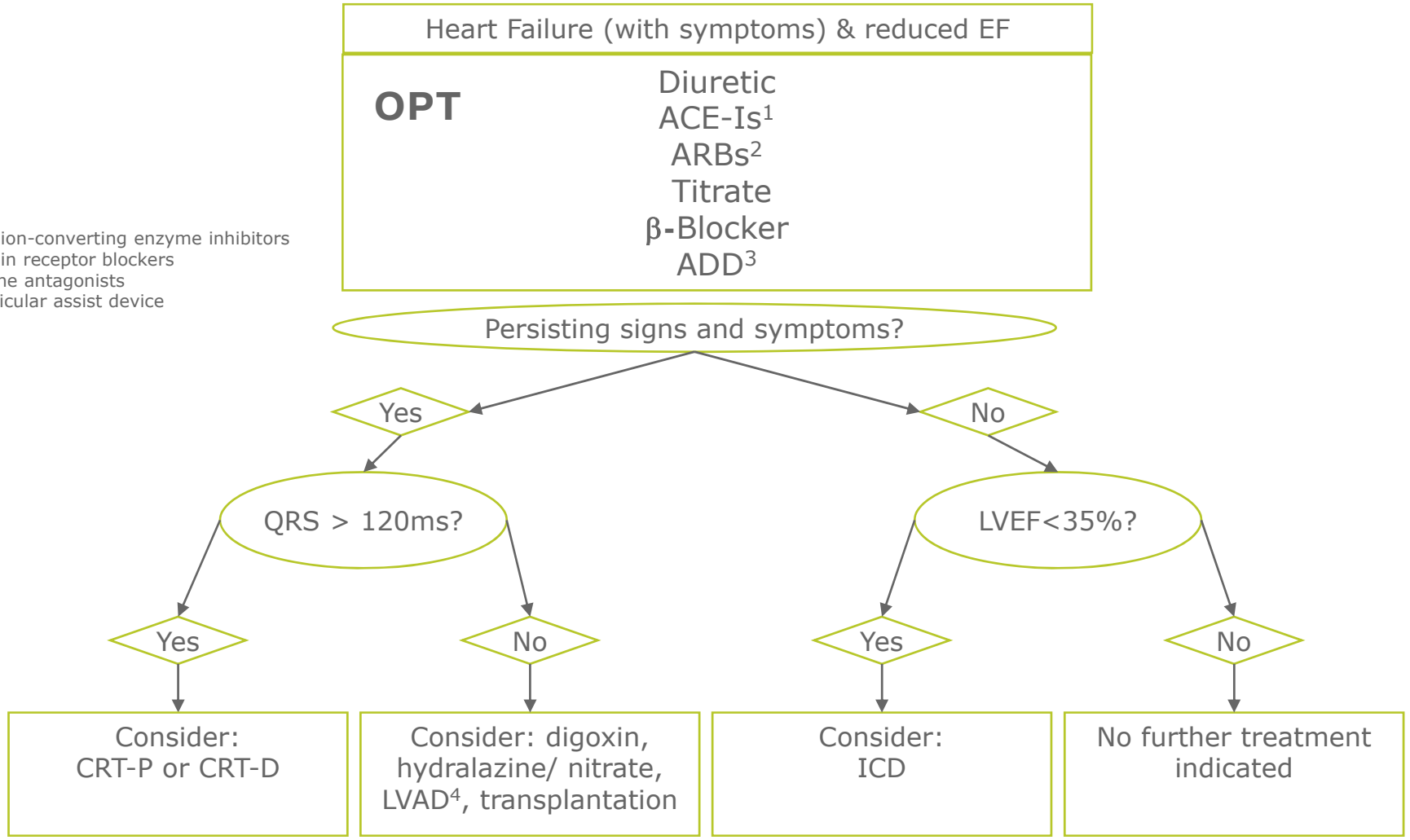
Treatment algorithm for patients with symptomatic heart failure & reduced ejection fraction



1 Angiotension-converting enzyme inhibitors
2 Angiotensin receptor blockers
3 Aldosterone antagonists
4 Left ventricular assist device

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Classes of recommendations

Class I		Evidence and/or general agreement that a given treatment or procedure is beneficial, and effective. **→Is recommended / is indicated**
Class II		Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.
	II A	Weight of evidence/opinion is in favour of usefulness/efficacy. **→ Should be considered.**
	II B	Usefulness/efficacy is less established by evidence/opinion. **→ May be considered.**
Class III		Evidence or general agreement that the given treatment or procedure is not useful/effective and in some cases may be harmful. **→ Is not recommended.**

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Level of evidence

Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Level of evidence C	Consensus of opinion of experts and/or small studies, retrospective studies, and registries.

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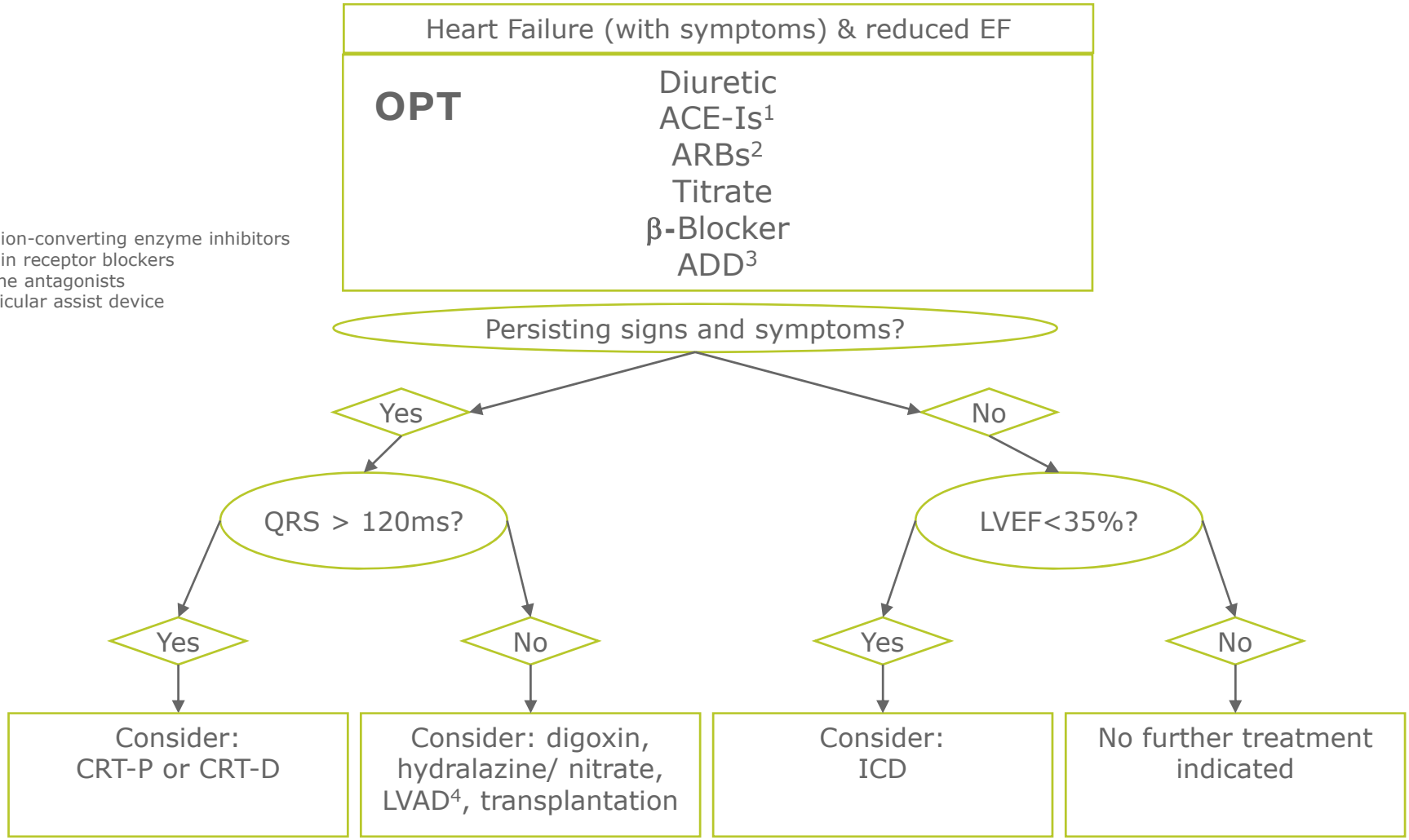

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CRT-P and CRT-D(new)

Guidelines recommend Class I Level of evidence A

Now CRT-D is also recommended as Class I Level of evidence A.

Patient population

- NYHA class III/IV, OPT, LVEF ≤35%, QRS≥120 ms

Clinical benefit

- Improve symptoms/reduce hospitalization
- Reduce mortality

Clinical trial evidence

- CRT-D indications have been changed according to the results of COMPANION.
- COMPANION[1] demonstrated a significant decrease in total mortality in CRT-D patients.

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[1] Bristow MR et al.; N Engl J Med 2004;350:2140–2150.

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Remote monitoring

Guidelines recommend Class IIb Level of evidence C

Based on the Wilkoff et al. consensus paper remote monitoring has been recommended for the first time.

- "Remote monitoring is the continuous collection of patient information and to review this information without patient present.
- …remote monitoring may decrease healthcare utilization through fewer hospital admissions for chronic HF, fewer heart failure-related re-admissions, and more efficient device management.
- Ongoing trials will assess the clinical utility of such an approach."

- Based on the consensus paper:
  (Wilkoff B. et al.; HRS/EHRA expert consensus on the monitoring of cardiovascular implantable electronic devices (CIEDs): description of techniques, indications, personnel, frequency and ethical considerations. Heart Rhythm. 2008; 5(6):907-25.)

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Pacemakers

Guidelines recommend Class IIa Level of evidence C.

CRT-P recommendation addresses new patient population in NYHA II.

CRT-P devices

Patient population

- Patients with concomitant indication for permanent pacing (first implant or upgrading of a conventional pacemaker) in NYHA II-IV, LVEF≤35%, or LV dilatation.

Clinical benefit

- Avoid deleterious or increase dyssynchrony due to right ventricular pacing.

DDD-pacemakers

Patient population

- Patients with heart failure and sinus rhythm.

Clinical benefit

- Maintain normal chronotropic response and coordinate the atrial and ventricular contraction.

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CRT-P and CRT-D

Guidelines recommend Class I Level of evidence A.

Patient population

- NYHA III-IV class with symptoms
- OPT, LVEF≤35%
- QRS≥120 ms

Clinical benefit

- Improve symptoms /reduce hospitalizations
- Reduce morbidity and mortality

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ICD 1 / 3

Guidelines recommend Class I Level of evidence A.

Patient population

- Secondary prevention
  (survivor of ventricular fibrillation, patients with documented haemodynamically unstable VT and/or VT with syncope)
- OPT, LVEF≤40%
- Survival expectation > 1year

Clinical benefit

- Reduce mortality

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ICD 2 / 3

Guidelines recommend Class I Level of evidence A.

Patient population

- Primary prevention in NYHA II/III
- OPT, LVEF≤35%
- LV dysfunction due to MI >40 days
- Survival expectation > 1year

Clinical benefit

- Reduce mortality

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ICD 2 / 3

Guidelines recommend Class I Level of evidence B.

Patient population

- Primary prevention in NYHA II/III
- OPT, LVEF≤35%
- Non-ischemic cardiomyopathy
- Survival expectation > 1year

Clinical benefit

- Reduce mortality

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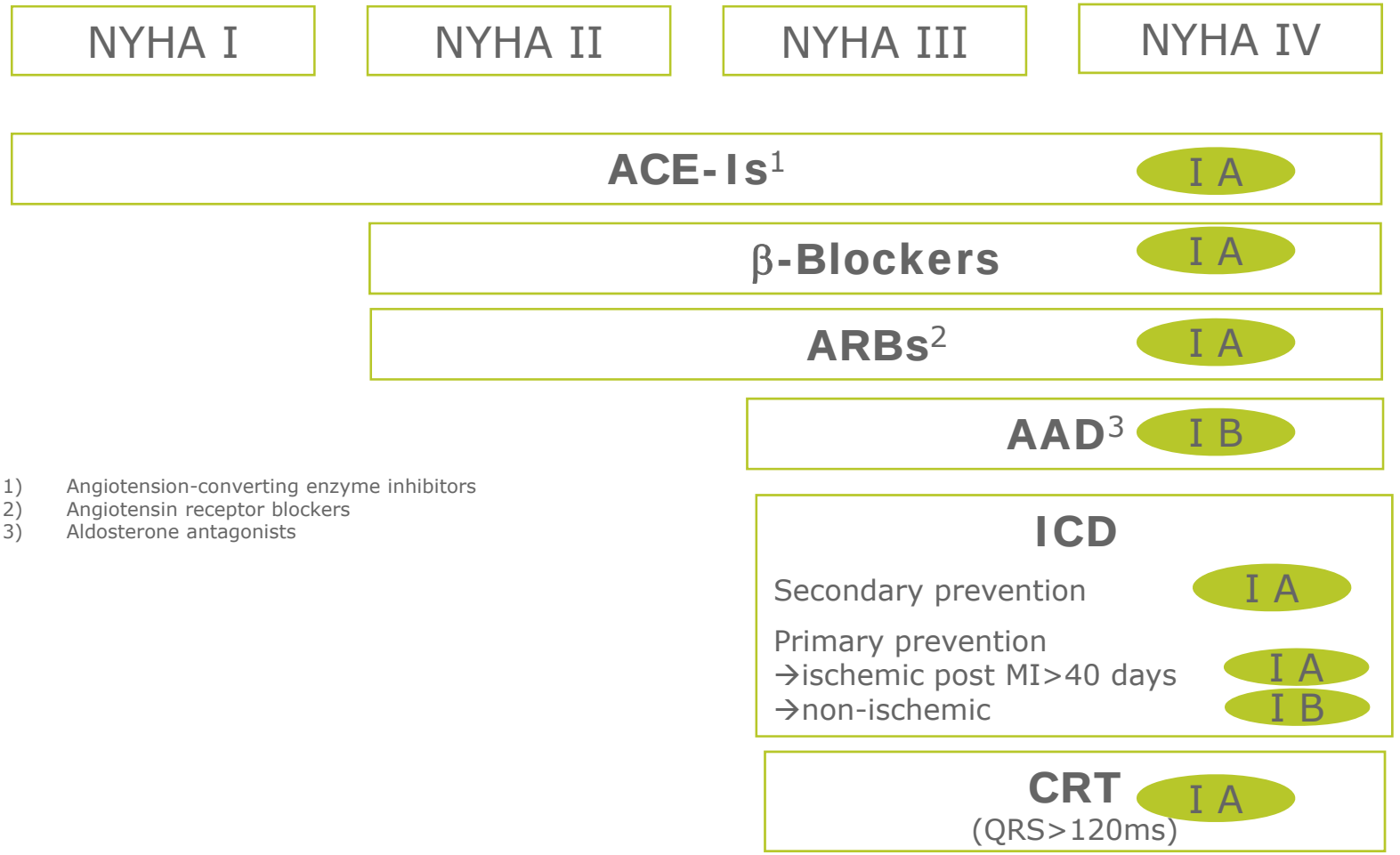
Treatment overview in heart failure patients (1/2)



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Treatment overview in heart failure patients (2/2)

Drug / Device	Class / Evidence	Clinical benefit
ACE-I	I A	→Improves ventricular function and patient well-being
β-Blockers	I A	→Reduces hospital admission for worsening HF
ARBs	I A	→Increases survival
AADs	I B	
ICD		
→Secondary prevention	I A	→Reduces mortality
→Primary prevention		
-ischemic post MI>40 d	I A	
-non-ischemic	I B	
CRT	I A	→Improves symptoms/reduces hospitalizations
		→Reduces mortality

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BIOTRONIK provides a complete ICD / CRT product portfolio according to the ESC guidelines

Indication	Therapy requirements	BIOTRONIK devices
ICD indication Primary prevention	ICD therapy and extended longevity	VR-ICD Lumax 340 VR-T XL Lumax 540 VR-T
ICD indication Permanent AF	ICD therapy and pacing in V	VR-ICD Lexos Lumos Lumax 300/340 VR-T/XL Lumax 540 VR-T
ICD indication Pacing indication	ICD therapy and pacing in A&V	DR-ICD Lexos Lumos Lumax 300/340 DR-T Lumax 540 DR-T
ICD indication Paroxymal AF, SVT	ICD therapy and SVT discrimination	
NYHA III-IV class OPT, LVEF≤35% QRS≥120 ms	Cardiac Resynchronization Therapy	CRT-D Lumax HF-T 300/340 ™ Lumax HF-T 540™ CRT-P Stratos

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Conclusion

- Guidelines now recommend CRT-D and CRT-P as routine heart failure therapy with Class I Level of evidence A.
- Remote monitoring of patients with CRM devices is recommended for the first time in the ESC guidelines.
  - BIOTRONIK Home Monitoring®, TRUST and REFORM trials will provide further clinical evidence of the benefits of remote monitoring.
- New option of Stratos therapy, CRT-P, in NYHA II patients.
- BIOTRONIK ICD/CRT devices provide the advanced technology to fulfil guidelines recommendations.

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