

해당 사항을 기재하고 체크하십시오

	LVEF(%)	측정일자	Classification of HF	환자이름/번호 :	/
Most recent			<input type="checkbox"/> HFREF <input type="checkbox"/> HFmEF <input type="checkbox"/> HFpEF <input type="checkbox"/> HFIEF <input type="checkbox"/> RVF	환자나이/성별 :	/
The first			NYHA class (퇴원시점)	진료과/교수/주치의 :	/ /
The lowest			<input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV	퇴원 일자 :	/
			체중 / 혈압 / 맥박 (퇴원시점)	HD # :	외래 F/U 예정 일자:
			kg mmHg bpm		

아래 사항을 확인하고 체크하십시오

Type : De novo ADHF

Comorbidities : Yes No → If "yes", please tick the following boxes:

- Hypertension
- DM
- Dyslipidemia
- Anemia (F: Hb <12 g/dL, M: Hb <13 g/dL)
- Iron deficiency (Ferritin <100 or 100-299 ng/mL with TSAT(Fe/TIBC) <20%)
- Atrial fibrillation
- CKD
- COPD, asthma
- Cancer
- Others, please specify :

Etiology of heart failure choose the most important ONE you think. (빛첨 참조)

- Ischemic heart disease
- Non-ischemic heart disease
 - Valvular heart disease
 - Cardiomyopathy
 - Arrhythmia-induced cardiomyopathy
 - Hypertensive heart failure
 - Others, please specify :
- Indeterminate

금번 심부전 악화 유발 요인 (해당 사항에 모두 체크하십시오)

- Acute coronary syndrome
- Arrhythmia (tachy- or brady-arrhythmia)
- Infection
- Poor compliance on diet (esp, salt) or drug therapy
- Renal dysfunction/failure
- Medication (ex. NSAIDs, chemo agents, steroids, saxagliptin, alogliptin, thiazolidinedione, etc.)
- Uncontrolled BP
- Disease progression
- Others, please specify : (빛첨 참조)

다음 약제들을 투약했나요? 안했다면 이유를 골라 체크하십시오

<p>ARNI</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> eGFR <20 ml/min/1.73m² or >100% of baseline SCr Hyperkalemia (K⁺ >5.5 mmol/L) Low BP (SBP <90 mmHg) ACEI use within the prior 36 hours <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> 2.0 ≤ eGFR <30 or increased(≤100%) SCr 2.5 ≤ K⁺ ≤ 5.5 90 ≤ SBP <100 LVEF >40% (insurance issue) <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>ACEI or ARB</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> eGFR <20 ml/min/1.73m² or >100% of baseline SCr Hyperkalemia (K⁺ >5.5 mmol/L) Low BP (SBP <90 mmHg) Use of ARNI <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> 2.0 ≤ eGFR <30 or increased(≤100%) SCr 2.5 ≤ K⁺ ≤ 5.5 90 ≤ SBP <100 LVEF >40% (lowest) <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>Beta-Blocker</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> Low BP (SBP <90 mmHg) Bradycardia (HR <50 bpm) Asthma Still in fluid overloaded <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> 90 ≤ SBP <100 50 ≤ HR <60 Peripheral vascular disease LVEF >40% (lowest) <p><input type="checkbox"/> No (other reason(s)) :</p>
<p>MRA (Aldosterone Antagonist)</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> eGFR <20 ml/min/1.73m² or >100% of baseline SCr Hyperkalemia (K⁺ >5.5 mmol/L) <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> 2.0 ≤ eGFR <30 or increased(≤100%) SCr 2.5 ≤ K⁺ ≤ 5.5 LVEF >40% (lowest) S/E (Gynecomastia) <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>SGLT2 inhibitors (Dapagliflozin or Empagliflozin)</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> eGFR <20 ml/min/1.73m² Low BP (SBP <90 mmHg) <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> No DM (insurance issue) S/E (UTI or genital infection) <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>Anticoagulation</p> <p><input type="checkbox"/> Yes (Please circle indication(s) below)</p> <ol style="list-style-type: none"> AF/AFL Mechanical valve Thrombus Other(s) : <p><input type="checkbox"/> No (Please circle reasons below)</p> <ol style="list-style-type: none"> Not indicated CHA₂DS₂-VASc=1 → only CHF(+) Ischemic stroke <12 days Hemorrhagic stroke <4 weeks Other acute bleeding event Physician decision d/t :
<p>Ivabradine</p> <p><input type="checkbox"/> Yes (SR HR ≥75 bpm & none of below)</p> <p><input type="checkbox"/> No (Not suitable. Please circle reasons below)</p> <ol style="list-style-type: none"> HR <75 bpm Not in sinus rhythm Not on Max. tolerated dose of BB or not Clx to BB Use of ACEI/ARB, BB, MRA for <4 weeks LVEF >40% (lowest) <p>(*35% < EF ≤40%: Insurance 50%, EF ≤35%: 100% cover)</p> <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>Ferric carboxymaltose/IV</p> <p><input type="checkbox"/> Yes</p> <p>LVEF <50%</p> <p>Serum ferritin <100 ng/ml or 100-299 ng/ml with TSAT(Fe/TIBC) <20%</p> <p><input type="checkbox"/> No (Physician decision. Please circle reasons below)</p> <ol style="list-style-type: none"> LVEF ≥50% Serum ferritin >300 or 100-299 ng/ml but TSAT ≥20% or Hb >15 Cost issue Known hypersensitivity or severe allergies <p><input type="checkbox"/> No (other reason(s)) :</p>	<p>PRN Diuretics (Loop diuretics)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>(May use when ↑ dyspnea or edema or a sudden unexpected weight gain of >2 kg in 3 days)</p>

다음 Device 치료를 권고/시행했나요? 안했다면 이유를 골라 체크하십시오

<p>ICD has been offered to patient with LVEF ≤35% (most recent)</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (Please circle reasons below)</p> <ol style="list-style-type: none"> Patient not keen Other reason(s) : <p><input type="checkbox"/> Not applicable (Please circle reasons below)</p> <ol style="list-style-type: none"> LVEF >35% Recent MI <40 days Optimal medical Tx (OMT) for <3 months Planning PCI or CABG or AVR or HTX Expected survival <1 year 	<p>CRT has been offered to patient with LVEF ≤35% (most recent)</p> <p><input type="checkbox"/> Yes (AF/SR with LBBB: QRS ≥130 ms, SR with non-LBBB: QRS ≥150 ms)</p> <p><input type="checkbox"/> No (Please circle reasons below)</p> <ol style="list-style-type: none"> Patient not keen Other reason(s) : <p><input type="checkbox"/> Not applicable (Please circle reasons below)</p> <ol style="list-style-type: none"> LVEF >35% Optimal medical Tx (OMT) for <3 months QRSd <130ms (SR with LBBB or AF) QRSd <150ms (SR with non-LBBB) [*SR= sinus rhythm]
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환자 교육, 재발 및 추적 계획

환자 교육 및 재발 치료를 안내하였습니까?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
퇴원 환자의 추적 관리 계획 (다음 항목에 대해 F/U 일정 잡은 경우 체크)	<input type="checkbox"/> 전해질/혈액화학 수치 추적 검사	<input type="checkbox"/> EKG	<input type="checkbox"/> X-ray

검토자 MD : 검토 일자 : 검토 시간 :

☑ Etiology of heart failure (In detail)

Ischemic heart disease

Patients with Hx of MI or revascularization (CABG or PCI)

Patients with $\geq 75\%$ stenosis of LM or pLAD

Patients with $\geq 75\%$ stenosis of 2 or more epicardial vessels

*Definition of ischemic CMP ref) A Standardized Definition of Ischemic Cardiomyopathy for Use in Clinical Research. J Am Coll Cardiol 2002;39:210-8.

Valvular heart disease: \geq moderate or \geq grade III; not "Functional"

Idiopathic DCM

HCM: Apical, non-apical

RCM: Non-infiltrative, infiltrative (e.g., amyloidosis, sarcoidosis)

Peripartum CMP

Stress-induced CMP

Alcoholic CMP

Chemotherapy-induced CMP

Arrhythmia-induced CMP:

Presence of a sustained tachycardia(>100 bpm) (or frequent episodes of tachycardia or very frequent ectopy) which results in LV systolic dysfunction. Usually the Dx can only be made following a successful trial of Tx to slow the HR or to restore sinus rhythm along with the exclusion of other potential causes of CMP

Hypertensive HF:

Attributed to long-standing uncontrolled HTN, usually accompanied with LVH in the absence of other causes of HF

Thyroid Dz-mediated:

Uncontrolled hyperthyroidism, severe hypothyroidism

Congenital

Acute myocarditis

Other

☑ 금번 심부전 악화 유발 요인 (해당 사항에 모두 체크하십시오)

Pulmonary embolism

Anemia or bleeding

Excessive alcohol or illicit drug use

Endocrine abnormalities (ex. diabetes, thyroid disease)

Increased sympathetic drives (ex. stress-induced cardiomyopathy)

Recent addition of negative inotropic drugs (e.g., verapamil, nifedipine, diltiazem, beta-blockers)

Surgery and perioperative problems

Indeterminate

Not in decompensated condition

Others (Please specify) :

☑ 환자 교육 및 심장재활

생활 관리(저염식) 및 수분 섭취 제한에 대하여 안내하였습니까?

매일 체중/혈압/맥박 측정에 대하여 안내하였습니까?

심부전 증상 악화 시 대처법에 대하여 안내하였습니까?

적절한 강도의 신체 활동/운동량에 대하여 상담하였습니까?

현재 또는 최근(지난 1년간 금연한) 흡연자에 대하여 금연을 권고하였습니까?

과도한 알코올 섭취의 위험성에 대해 교육하였습니까?

치료법과 복용 약물에 대해 충분히 안내하였습니까? (발생 가능한 이상반응, 복용 이유, 순응도의 필요성)

심부전 환자를 위한 교육 자료를 배부하였습니까?

MEMO

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ACEI, angiotensin converting enzyme inhibitor; ACS, acute coronary syndrome; ADHF, acute decompensated heart failure; AF, atrial fibrillation; AFL, atrial flutter; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor neprilysin inhibitor; AVR, aortic valve replacement; BB, beta blocker; BP, blood pressure; BPM, beats per minute; CABG, coronary artery bypass graft; CHF, congestive heart failure; Ctx, contraindication; CKD, chronic kidney disease; CMP, cardiomyopathy; COPD, chronic obstructive pulmonary disease; CRT, cardiac resynchronization therapy; DCM, dilated cardiomyopathy; DM, diabetes mellitus; Dx, diagnosis; DZ, disease; EF, ejection fraction; eGFR, estimated glomerular filtration rate; EKG, electrocardiogram; F, female; Fe, iron; F/U, follow-up; Hb, hemoglobin; HCM, hypertrophic cardiomyopathy; HD, hospitalized days; HF, heart failure; HFIEF, heart failure with improved ejection fraction; HFmrEF, heart failure with mildly reduced ejection fraction; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; HR, heart rate; HTN, hypertension; HTx, heart transplant; Hx, history; ICD, implantable cardioverter-defibrillator; LBBB, left bundle branch block; LM, left main coronary artery; LV, left ventricular; LVEF, left ventricular ejection fraction; LVH, left ventricular hypertrophy; M, male; MI, myocardial infarction; MRA, mineralocorticoid receptor antagonist; NSAID, non-steroidal anti-inflammatory drug; NYHA, New York Heart Association; OMT, optimal medical therapy; OPD, outpatient department; PCI, percutaneous coronary intervention; pLAD, proximal left anterior descending artery; PRN, as needed; RA, right atrium; RCM, restrictive cardiomyopathy; RVF, right ventricular failure; SBP, systolic blood pressure; Scr, serum creatinine; S/E, side effect; SGLT, sodium-glucose co-transporter; SR, sinus rhythm; TIBC, total iron-binding capacity; TSAT, transferrin saturation; Tx, treatment; UTI, urinary tract infection.

References 1. 2022 심부전 진료지침, 대한심부전학회 2. 금성심부전 레지스트리(KorAHF) 성과집 2010-2018, 국립보건연구원 3. 대한민국 보령급여 기준. Last Reviewed: Sep 12, 2023 4. American Heart Association. Target: HF Strategies and Clinical Tools. Last Reviewed: Sep 12, 2023. <http://www.heart.org/> 5. McDonagh TA, et al. Eur Heart J. 2021 Sep 21;42(36):3599-3726.