Syncopes
Stratégie diagnostique aux urgences et en unité de syncope

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Disclosures

- Research and expertise fees : ABBOTT, Biotronik, Boston Scientific, Medtronic, Microport

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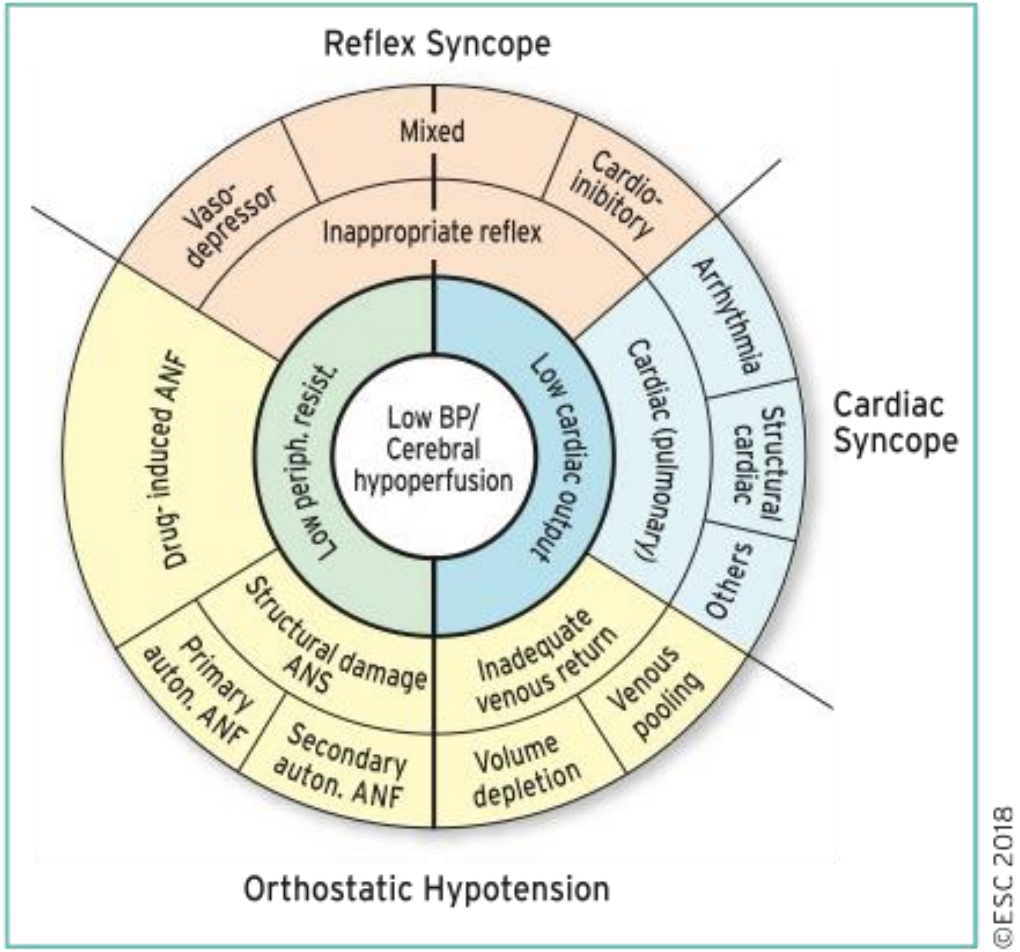
ESC GUIDELINES

2018 ESC Guidelines for the diagnosis and management of syncope

The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC)

Developed with the special contribution of the European Heart Rhythm Association (EHRA)

Endorsed by: European Academy of Neurology (EAN), European Federation of Autonomic Societies (EFAS), European Federation of Internal Medicine (EFIM), European Union Geriatric Medicine Society (EUGMS), European Society of Emergency Medicine (EuSEM)



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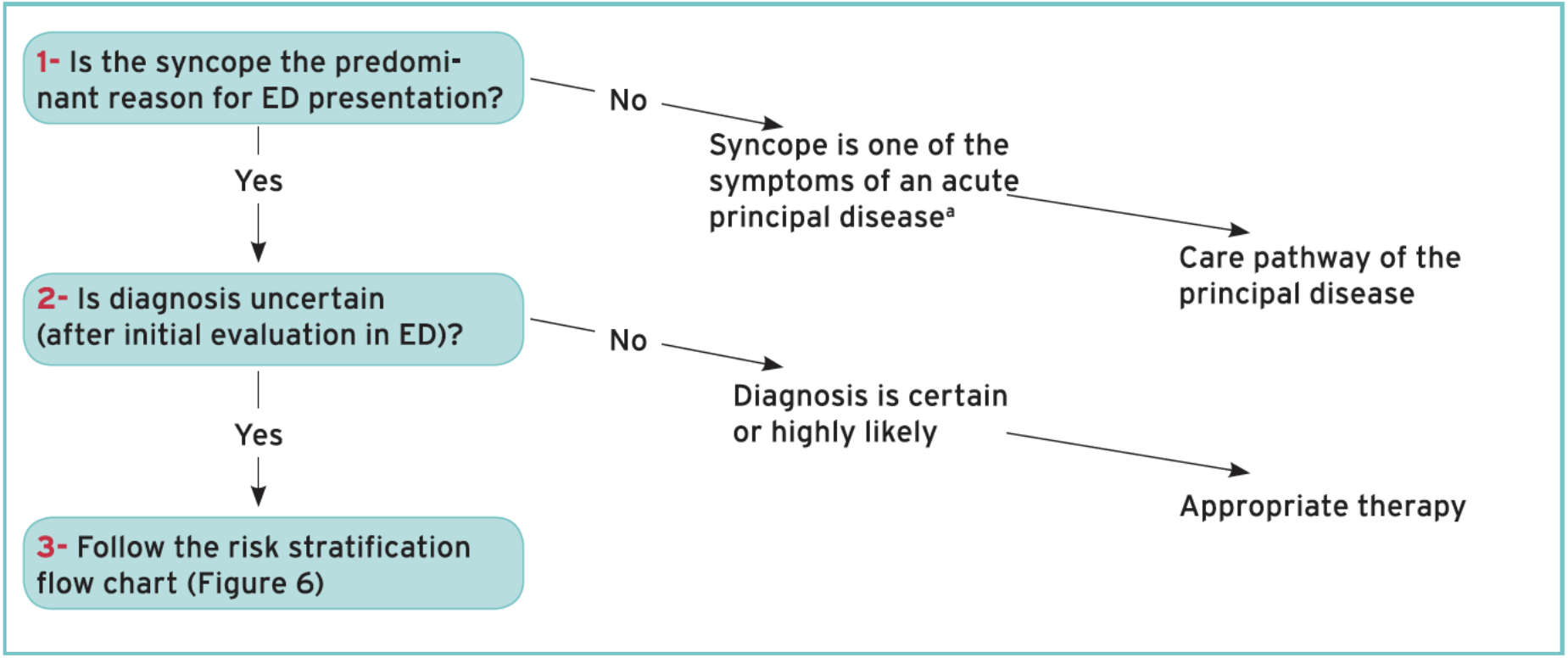
Syncopes d’étiologie indéterminée

- 20% des syncopes sont d’étiologie indéterminée
- Risque relatif de mortalité toutes causes confondues : 1,3


1- Is the syncope the predominant reason for ED presentation?
No
Syncope is one of the symptoms of an acute principal disease[a]
Care pathway of the principal disease
Yes
2- Is diagnosis uncertain (after initial evaluation in ED)?
No
Diagnosis is certain or highly likely
Appropriate therapy
Yes
3- Follow the risk stratification flow chart (Figure 6)

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Stratification du risque

Standardized-care pathway vs. usual management of syncope patients presenting as emergencies at general hospitals

Michele Brignole[1*], Andrea Ungar[2], Angelo Bartoletti[3], Irene Ponassi[4], Alfonso Lagi[5], Chiara Mussi[6], Maria Angela Ribani[7], Gianni Tava[8,9], Marcello Disertori[8,9], Fabio Quartieri[8,9], Paolo Alboni[11], Antonio Raviele[12], Fabrizio Ammirati[13], Alessandro Scivales[14], and Tiziana De Santo[14] for the Evaluation of Guidelines in Syncope Study 2 (EGSYS-2) group

A new management of syncope: prospective systematic guideline-based evaluation of patients referred urgently to general hospitals

Michele Brignole[1*], Carlo Menozzi[2], Angelo Bartoletti[3], Franco Giada[4], Alfonso Lagi[5], Andrea Ungar[6], Irene Ponassi[7], Chiara Mussi[8], Roberto Maggi[1], Giuseppe Re[9], Raffaello Furlan[10], Gianni Rovelli[11], Patrizia Ponzi[12], and Alessandro Scivales[12] for the Evaluation of Guidelines in Syncope Study 2 (EGSYS-2) group[†]

Standardized Approaches to the Investigation of Syncope: Canadian Cardiovascular Society Position Paper

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Recommandations ESC 2018

- **Evaluation initiale :**
  Anamnèse, examen clinique, ECG, test HTO
- **surveillance télémétrique, Biologie, ETT, MSC**
- **Stratification du risque**
- **Orientation du patient**

Critères de risque

SYNCOPAL EVENT
Low-risk
• Associated with prodrome typical of reflex syncope (e.g. light-headedness, feeling of warmth, sweating, nausea, vomiting)[36,49] • After sudden unexpected unpleasant sight, sound, smell, or pain[36,49,50] • After prolonged standing or crowded, hot places[36] • During a meal or postprandial[51] • Triggered by cough, defaecation, or micturition[52] • With head rotation or pressure on carotid sinus (e.g. tumour, shaving, tight collars)[53] • Standing from supine/sitting position[54]
High-risk
Major
• New onset of chest discomfort, breathlessness, abdominal pain, or headache[26, 44, 55] • Syncope during exertion or when supine[36] • Sudden onset palpitation immediately followed by syncope[36]
Minor (high-risk only if associated with structural heart disease or abnormal ECG):
• No warning symptoms or short (<10 s) prodrome[36, 38, 49, 56] • Family history of SCD at young age[57] • Syncope in the sitting position[54]
PAST MEDICAL HISTORY
Low-risk
• Long history (years) of recurrent syncope with low-risk features with the same characteristics of the current episode[58] • Absence of structural heart disease[27, 58]
High-risk
Major
• Severe structural or coronary artery disease (heart failure, low LVEF or previous myocardial infarction)[26, 27, 35, 55, 59]
PHYSICAL EXAMINATION
Low-risk
• Normal examination

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PHYSICAL EXAMINATION	
High-risk	
Major	
• Unexplained systolic BP in the ED <90 mmHg[26, 55] • Suggestion of gastrointestinal bleed on rectal examination[44] • Persistent bradycardia (<40 b.p.m.) in awake state and in absence of physical training • Undiagnosed systolic murmur[60]	
ECG[a]	
Low-risk	
• Normal ECG[26, 35, 36, 55]	
High-risk	
Major	**Minor** (high-risk only if history consistent with arrhythmic syncope)
• ECG changes consistent with acute ischaemia • Mobitz II second- and third-degree AV block • Slow AF (<40 b.p.m.) • Persistent sinus bradycardia (<40 b.p.m.), or repetitive sinoatrial block or sinus pauses >3 seconds in awake state and in absence of physical training • Bundle branch block, intraventricular conduction disturbance, ventricular hypertrophy, or Q waves consistent with ischaemic heart disease or cardiomyopathy[44, 56] • Sustained and non-sustained VT • Dysfunction of an implantable cardiac device (pacemaker or ICD) • Type 1 Brugada pattern • ST-segment elevation with type 1 morphology in leads V1–V3 (Brugada pattern) • QTc >460 ms in repeated 12-lead ECGs indicating LQTS[46]	• Mobitz I second-degree AV block and 1ºdegree AV block with markedly prolonged PR interval • Asymptomatic inappropriate mild sinus bradycardia (40–50 b.p.m.), or slow AF (40–50 b.p.m.)[56] • Paroxysmal SVT or atrial fibrillation[50] • Pre-excited QRS complex • Short QTc interval (≤340 ms)[46] • Atypical Brugada patterns[46] • Negative T waves in right precordial leads, epsilon waves suggestive of ARVC[46]

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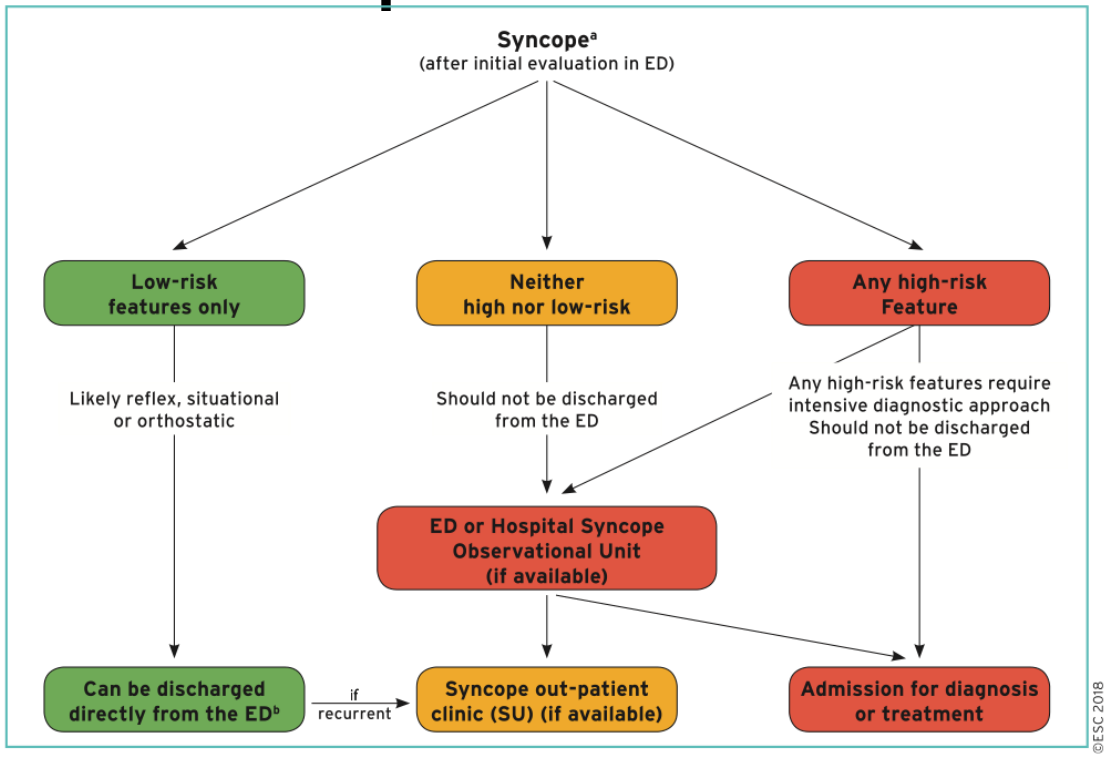
Algorithme d’orientation des patients



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Management of syncope in the emergency department

Recommendations	Class[a]	Level[b]
It is recommended that patients with low-risk features, likely to have reflex or situational syncope, or syncope due to OH, are discharged from the ED.[27,35,36,49–54,58,62,69]	I	B
It is recommended that patients with high-risk features receive an early intensive and prompt evaluation in a syncope unit or in an ED observation unit (if available), or are hospitalized.[26,27,35,36,44–46,50,55–57,59,60,70–76]	I	B
It is recommended that patients who have neither high- nor low-risk features are observed in the ED or in a syncope unit instead of being hospitalized.[40,63–65,77]	I	B
Risk stratification scores may be considered for risk stratification in the ED.[78–86]	IIb	B

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Additional advice and clinical perspectives

- In the ED, presyncope should be managed with the same accuracy as syncope as it carries the same prognosis.[66–68]
- Diagnostic radiology and laboratory tests such as chest X-ray, brain computed tomography, routine blood haematology, biochemistry, and D-dimer and cardiac markers have a low diagnostic yield, impact on risk stratification of patients with syncope, and should not routinely be used unless specifically suggested by clinical evaluation.
- Around 10% of patients with syncope in the ED will suffer from a serious outcome within 7–30 days of their visit, with just under half occurring after their stay in the ED (see *Supplementary Data Table 4*). It is crucial to identify these high-risk patients to ensure early, rapid, and intensive investigation.
- As syncope units are both effective and efficient, this early, rapid, and intensive investigation can be performed on an outpatient basis (either in a syncope unit or an ED observation unit) in most cases. Only patients with a risk of a short-term serious outcome should be considered for hospital admission.
- To reduce inappropriate admissions, patients who have a cardiac device and syncope should undergo prompt device interrogation.
- Risk stratification scores perform no better than good clinical judgement and should not be used alone to perform risk stratification in the ED.

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Table 7 High-risk syncope patients: criteria favouring a stay in an emergency department observation unit and/or fast-tracking to a syncope unit vs. requiring admission to hospital

Favour initial management in ED observation unit and/or fast-track to syncope unit	Favour admission to hospital
High-risk features AND: • Stable, known structural heart disease • Severe chronic disease • Syncope during exertion • Syncope while supine or sitting • Syncope without prodrome • Palpitations at the time of syncope • Inadequate sinus bradycardia or sinoatrial block • Suspected device malfunction or inappropriate intervention • Pre-excited QRS complex • SVT or paroxysmal atrial fibrillation • ECG suggesting an inheritable arrhythmogenic disorders • ECG suggesting ARVC	**High-risk features AND:** • Any potentially severe coexisting disease that requires admission • Injury caused by syncope • Need of further urgent evaluation and treatment if it cannot be achieved in another way (i.e. observation unit), e.g. ECG monitoring, echocardiography, stress test, electrophysiological study, angiography, device malfunction, etc. • Need for treatment of syncope

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ARVC = arrhythmogenic right ventricular cardiomyopathy; ECG = electrocardiogram; ED = emergency department; SVT = supraventricular tachycardia.

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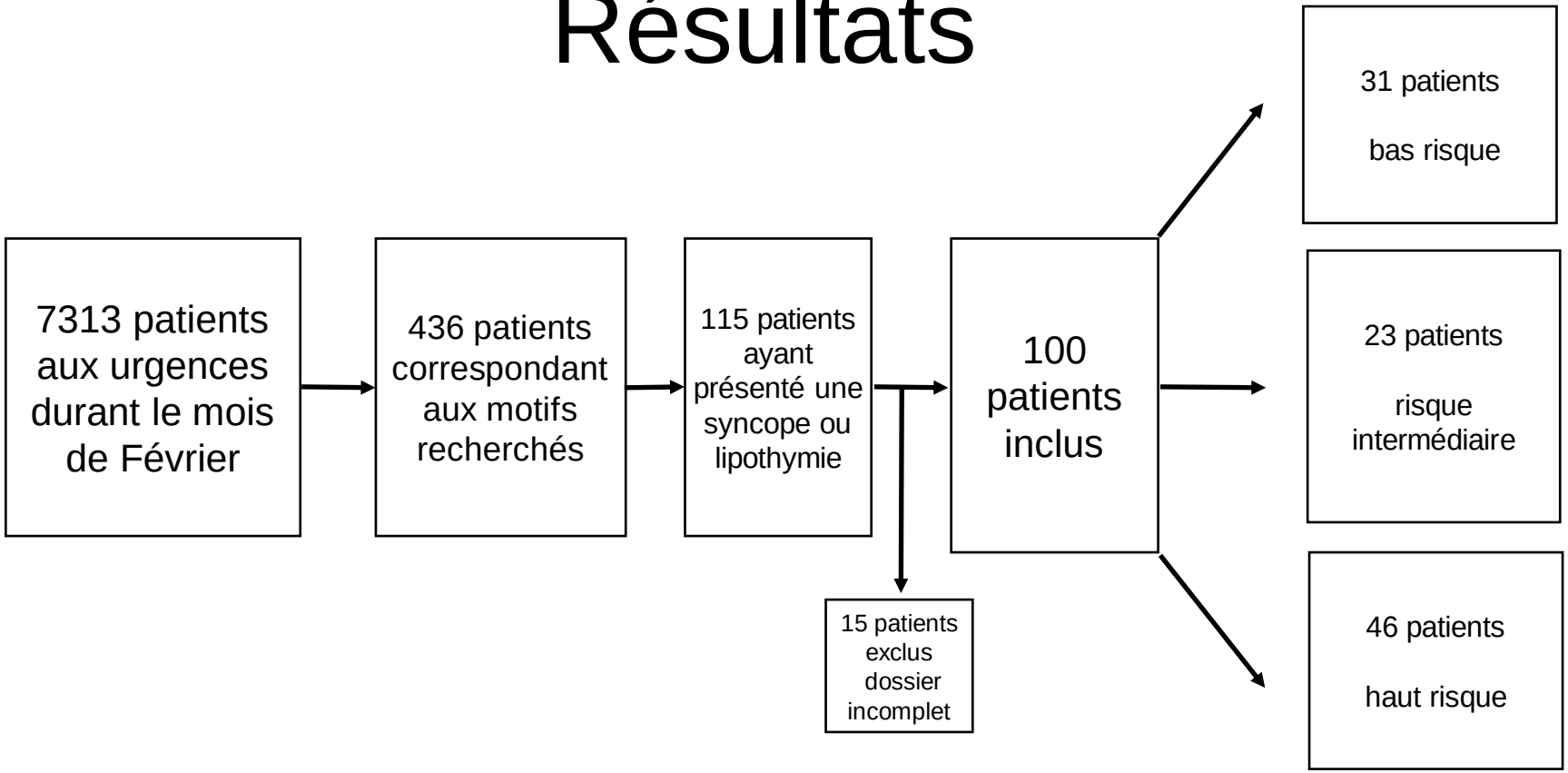
- **Etude observationnelle monocentrique rétrospective**
- **Du 1er au 28 Février 2018**
- **Service d'Accueil des Urgences du CHRU, Hôpital de La Cavale Blanche**

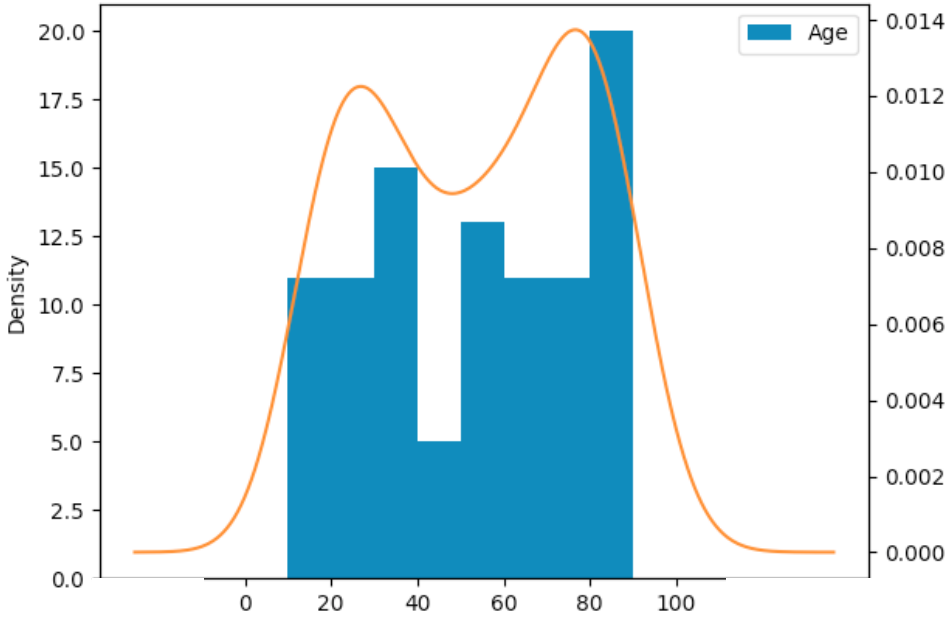
- **Application des recommandations ESC 2018**
  - **Stratification du risque**
  - **Orientation du patient**

- **Recherche de complications, décès, réhospitalisation**

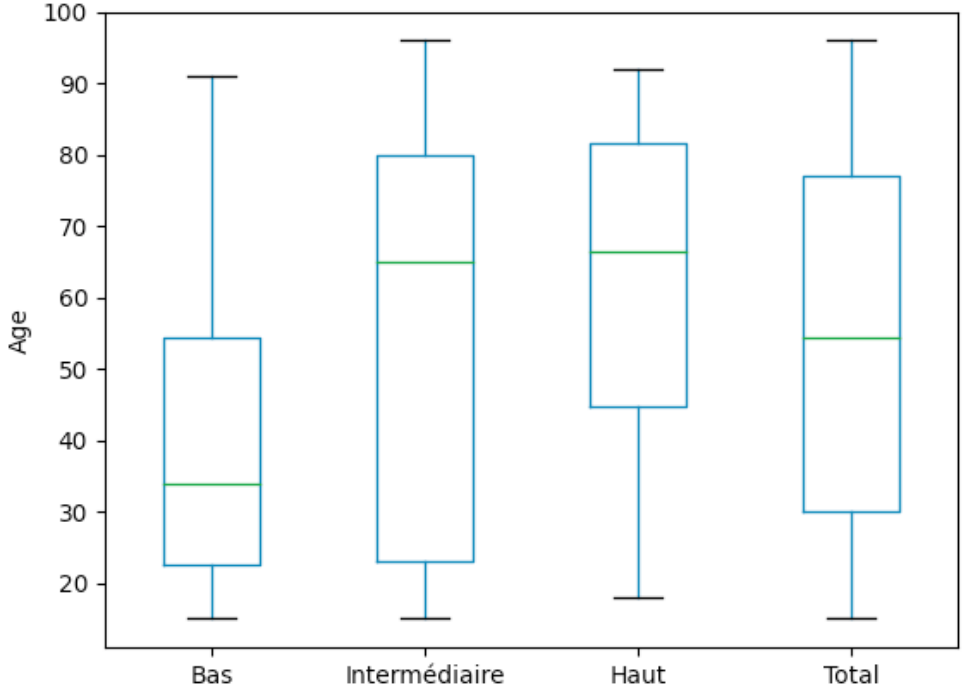
Résultats


7313 patients aux urgences durant le mois de Février
436 patients correspondant aux motifs recherchés
115 patients ayant présenté une syncope ou lipothymie
15 patients exclus dossier incomplet
100 patients inclus
31 patients bas risque
23 patients risque intermédiaire
46 patients haut risque

Distribution de l’échantillon



Répartition en fonction de l’âge et du sous-groupe

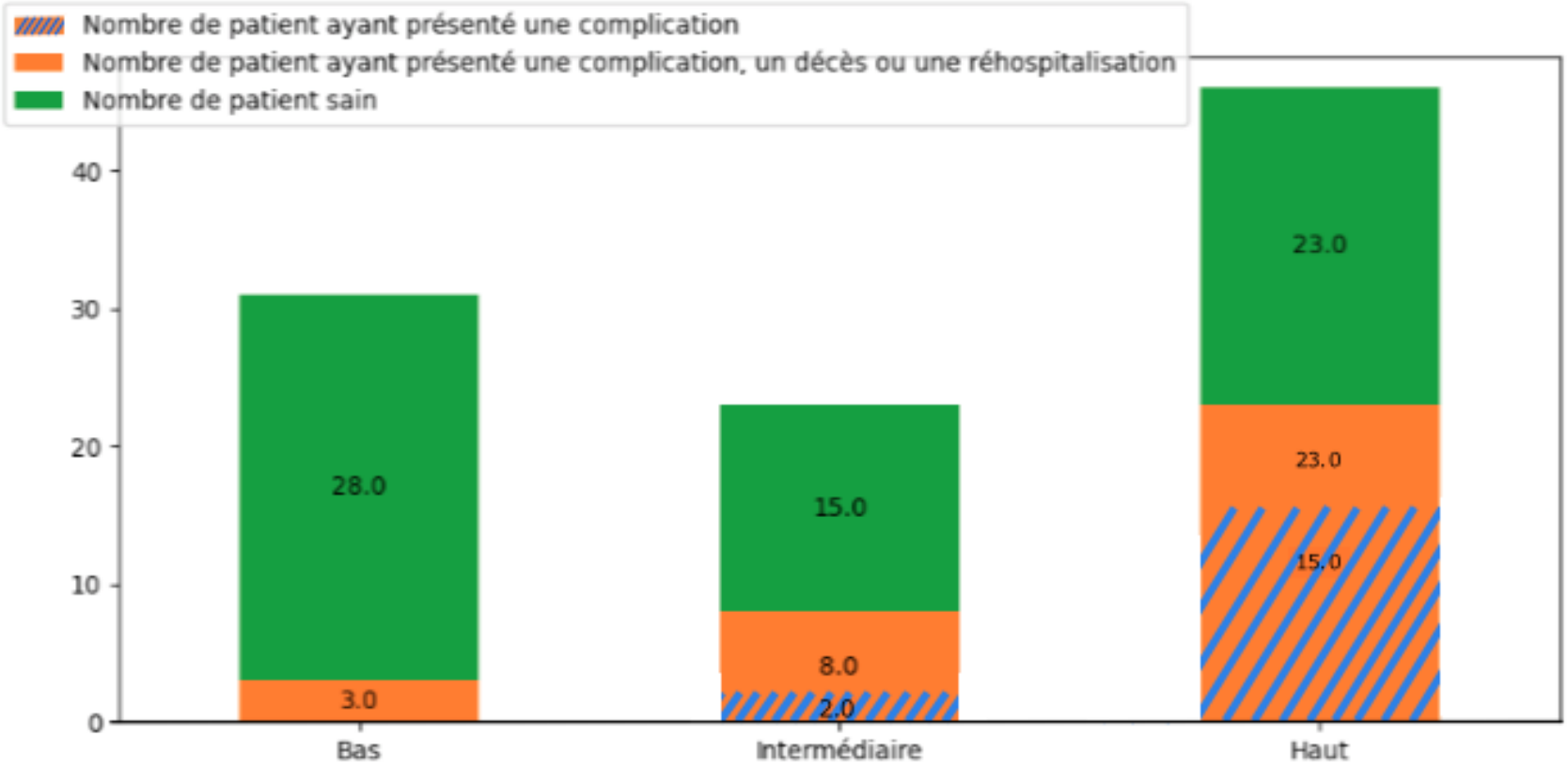


Caractéristiques

	Bas	Intermédiaire	Haut	Total
Caractéristiques des patients				
n	31	23	46	100
Age moyen, (ecart type)	40.1 (21.1)	54.0 (28.4)	62.0 (21.9)	53.4 (24.9)
Sexe masculin (%)	41.9	43.5	47.8	45.0
Durée moyenne de passage aux urgences, (écart type)	05h55min (02h49min)	12h57min (09h34min)	10h35min (08h25min)	09h41min (07h57min)

	Bas	Intermédiaire	Haut	Total
Traumatisme en lien avec la syncope				
Traumatisme bénin (%)	9.7	4.3	6.5	7.0
Traumatisme intermédiaire (%)	0.0	13.0	8.7	7.0
Traumatisme grave (%)	0.0	4.3	0.0	1.0
Examens paracliniques et avis spécialisé				
Avis auprès d'un cardiologue (%)	0.0	0.0	52.2	24.0
MSC* réalisé (%)	0.0	4.3	8.7	5.0
Test d'HTO* réalisé (%)	12.9	26.1	23.9	21.0
ETT réalisé/programmé en externe (%)	0.0	4.3	23.9	12.0
Examen biologiques réalisé (%)	67.7	82.6	100.0	86.0
Nombre d'examens biologiques moyen, (ecart type)	4.7 (3.7)	7.6 (3.5)	8.5 (2.3)	7.1 (3.5)
Holter-ECG programmé (%)	0.0	8.7	13.0	8.0
Scanner cérébral réalisé (%)	0.0	4.3	10.9	6.0
Radiographie réalisé (%)	12.9	13.0	30.4	21.0

Complications



Devenir des patients

	Bas	Intermédiaire	Haut
Complications et mortalité au décours de l'épisode syncopal			
Complications à un mois (%)	0.0	4.0	26.0
Complications à six mois (%)	0.0	4.0	9.0
Complications à un an (%)	0.0	0.0	4.0
Mortalité à 6 mois (n)	1	0.0	1
Mortalité à 1 an (n)	1	0.0	2
Hospitalisation pour une récidive au décours de l'épisode syncopal			
Hospitalisation dans les 6 mois (%)	3.0	9.0	28.0
Hospitalisation dans les 6-12 mois (%)	3.0	22.0	13.0
Consultation hospitalière pour bilan de syncope			
Consultation cardio dans les 6 mois (%)	0.0	4.0	26.0
Consultation cardio dans les 6-12 mois (%)	0.0	0.0	7.0

Devenir des patients

	Bas	Intermédiaire	Haut
Diagnostic à la sortie des urgences			
Etiologie réflexe (%)	77.0	57.0	22.0
Etiologie HTO (%)	10.0	17.0	4.0
Etiologie réflexe et HTO mixte (%)	3.0	4.0	2.0
Etiologie cardiaque (%)	0.0	0.0	39.0
Diagnostic non précisé (%)	6.0	22.0	33.0
Orientation après passage aux urgences			
Hospitalisation hors UHCD après passage aux urgences (%)	6.0	9.0	46.0
Hospitalisation en UHCD (%)	0.0	17.0	15.0
Hospitalisation en unité de soin intensif (%)	0.0	0.0	26.0
Consultation au près d'un cardiologue en externe programmée (%)	3.0	13.0	7.0
Orientation cohérente avec le score (%)	90.0	43.0	57.0

Syncope Unit

Table 11 Key components of a syncope unit

• The syncope unit should take the lead in service delivery for syncope, and in education and training of healthcare professionals who encounter syncope.
• The syncope unit should be led by a clinician with specific knowledge of TLOC and additional necessary team members (i.e. clinical nurse specialist) depending on the local model of service delivery.
• The syncope unit should provide minimum core treatments for reflex syncope and OH, and treatments or preferential access for cardiac syncope, falls, psychogenic pseudosyncope, and epilepsy.
• Referrals should be directly from family practitioners, EDs, in-hospital and out-hospital services, or self-referral depending on the risk stratification of referrals. Fast-track access, with a separate waiting list and scheduled follow-up visits, should be recommended.
• Syncope units should employ quality indicators, process indicators, and desirable outcome targets.

ED = emergency department; OH = orthostatic hypotension; TLOC = transient loss of consciousness.

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Table 12 Structure of the syncope unit

Staffing of a syncope unit is composed of:

(1) One or more physicians of any specialty who are syncope specialists. Owing to the multidisciplinary nature of TLOC management, each syncope unit should identify specific specialists for the syncope unit and for consultancies.

(2) A staff comprising professionals who will advance the care of patients with syncope. These may be physicians, specialized nurses, or others who bring multidisciplinary skills to the facility, coupled with administrative support. The roles played by members of the team may vary according to local circumstances and individual skill. Nurses may be expected to take very important roles including initial assessment, follow-up clinic evaluation, selection of investigations (including tilt testing), and implantation/insertion of ECG loop recorders according to predefined protocols and local regulations (see *Table 14*).

(3) Given that the syncope unit is integrated within a hospital organization, syncope specialists and staff are not necessarily employed full-time, but frequently have other duties depending on the volume of activity in the unit.

Facility, protocol, and equipment

(1) A syncope unit will deliver most of its care to outpatients in addition to ED and inpatients.

(2) The syncope unit should follow an internal protocol, which applies to diagnosis and management and is agreed by stakeholders.

(3) An equipped facility must be available.

(4) Essential equipment/tests:

- 12-lead ECG and 3-lead ECG monitoring
- Non-invasive beat-to-beat BP monitor with recording facilities for subsequent analysis
- Tilt-table
- Holter monitors/external loop recorders
- ILRs
- Follow-up of ILRs[a]
- 24-hour BP monitoring
- Basic autonomic function tests.

(5) Established procedures for:

- Echocardiography
- EPS
- Stress test
- Neuroimaging tests.

(6) Specialists' consultancies (cardiology, neurology, internal medicine, geriatric, psychology), when needed.

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Table 13 **Test and assessments available in a syncope unit**

Initial assessment	
History and physical evaluation including 3-min orthostatic BP measurement[a] 12-lead standard ECG	
Subsequent tests and assessments (only when indicated)	
Blood tests	Electrolytes, haemoglobin, troponin, B-type natriuretic peptide, glucose, D-dimer, haemogas analysis/oxygen saturation
Provocative tests	CSM, tilt testing
Monitoring	External loop recording, implantable loop recording, ambulatory 1–7 days ECG monitoring, 24–48-hour BP monitoring
Autonomic function tests	Standing test, Valsalva manoeuvre, deep-breathing test, cold pressor test, and/or established procedures for access to other autonomic function tests
Cardiac evaluation	Established procedures for access to echocardiogram, stress test, electrophysiological study, coronary angiography
Neurological evaluation	Established procedures for access to neurological tests (computed tomography, magnetic resonance imaging, EEG, video-EEG)
Geriatric evaluation	Established procedures for access to fall risk assessment (cognitive, gait and balance, visual, environmental) and for gait and balance retraining
Psychological or psychiatric evaluation	Established procedures for access to psychological or psychiatric consultancy (mental health problem or psychogenic syncope)

BP = blood pressure; CSM = carotid sinus massage; ECG = electrocardiogram; EEG = electroencephalogram.
[a]Postural orthostatic tachycardia may require longer period of standing.

Conclusion

Une stratification du risque aux urgences est importante pour mieux orienter le patient

La prise en charge par une unité de syncope ou par une équipe expérimentée permet d’éviter la prolongation du séjour aux urgences et d’optimiser la prise en charge (programmation des examens et des consultations ou prise en charge en ambulatoire)

Les patients à haut risque seront hospitalisés pour une prise en charge adaptée et plus rapide