

La nuova frontiera: algoritmi e software interattivi

Michele Brignole

Centro Aritmologico, Ospedali del Tigullio, Lavagna



Tigullio Cardiologia - 6° Corso GIMSI



Gruppo Italiano Multidisciplinare per lo Studio della Sincope

State-of-the-Art paper – JACC 2012

New concepts in the assessment of syncope

Michele Brignole and Mohamed H. Hamdan

- **Specialized Syncope Units:**
“The right physician, in the right place, at the right time”
- **Algorithms coupled with interactive decision-making softwares:**
“Second generation Syncope Units”

Evaluation of Guidelines in SYncope Study 2 (EGSYS-2)

Standardized care pathway versus usual management of syncope referred in emergency to general hospitals

Europace 2006; 8, 644–650

Sponsored by



Gruppo Italiano Multidisciplinare per lo Studio della Sincope

Percorso Diagnosi

[Menù](#)

[Valutazione](#)

[Certa](#)

[Test](#)

[Diagnosi Finale](#)

[Referti](#)

* I campi contrassegnati sono obbligatori

Sincopi Precedenti

Ci sono state sincopi precedenti






Si No

Numero totale sincopi

Numero sincopi ultimi 2 anni

Durata sincopi (anni)

Descrizione della perdita di coscienza (attuale)

Descrizione	Si	No	Help
Completa	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Transitoria, breve durata	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inizio rapido	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Recupero spontaneo, completo e rapido	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Perdita tono posturale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

*Cardiopatía strutturale

Presente

Assente

Percorso Diagnosi

- [Menù](#)
- [Valutazione](#)
- [Certa](#)
- [Test](#)
- [Diagnosi Finale](#)
- [Referti](#)

* I campi contrassegnati sono obbligatori

Sincopi Precedenti

Ci sono state sincopi precedenti Si No

Numero totale sincopi

Numero sincopi ultimi 2 anni

Durata sincopi (anni)

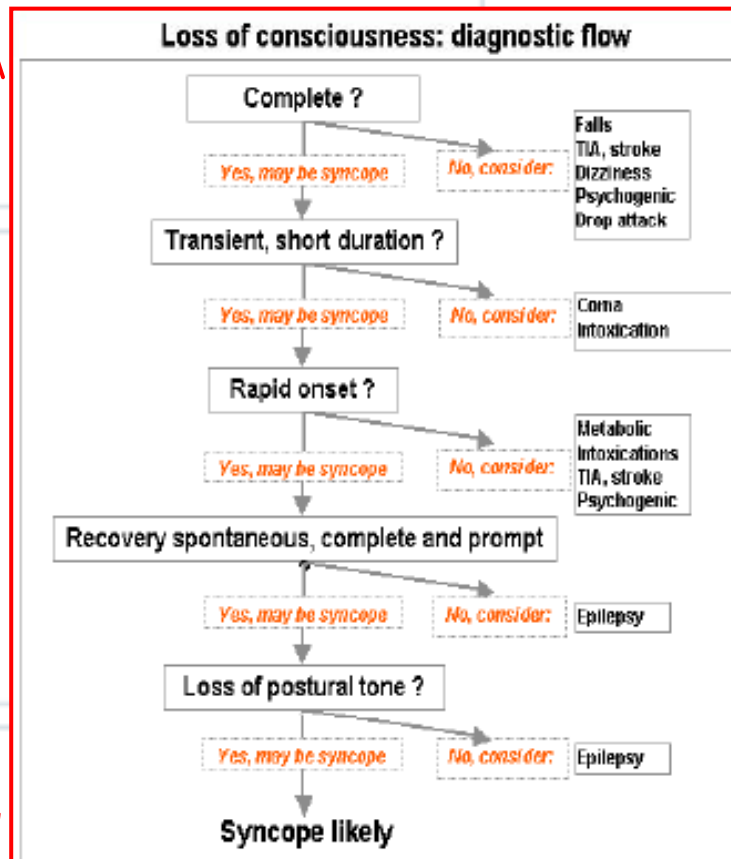
Descrizione della perdita di coscienza (attuale)

Descrizione	Si	No	Help
Completa	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Transitoria, breve durata	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inizio rapido	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Recupero spontaneo, completo e rapido	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Perdita tono posturale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

*Cardiopatía strutturale

Presente

Assente



Sincope Web - Microsoft Internet Explorer fornito da Alice

http://ccs.asl4.liguria.it:8080/Sincope/pages/nuovoUtenteLavagna.jsf

File Modifica Visualizza Preferiti Strumenti ?

Google Effettua la ricerca

Sincope Web

SYNCOPE WEB

Percorso Diagnosi
 Menù
 Valutazione

* I campi contrassegnati sono obbligatori

Sincopi Precedenti

Ci sono state sincopi precedenti

Numero totale sincopi

Numero sincopi ultimi 2 anni

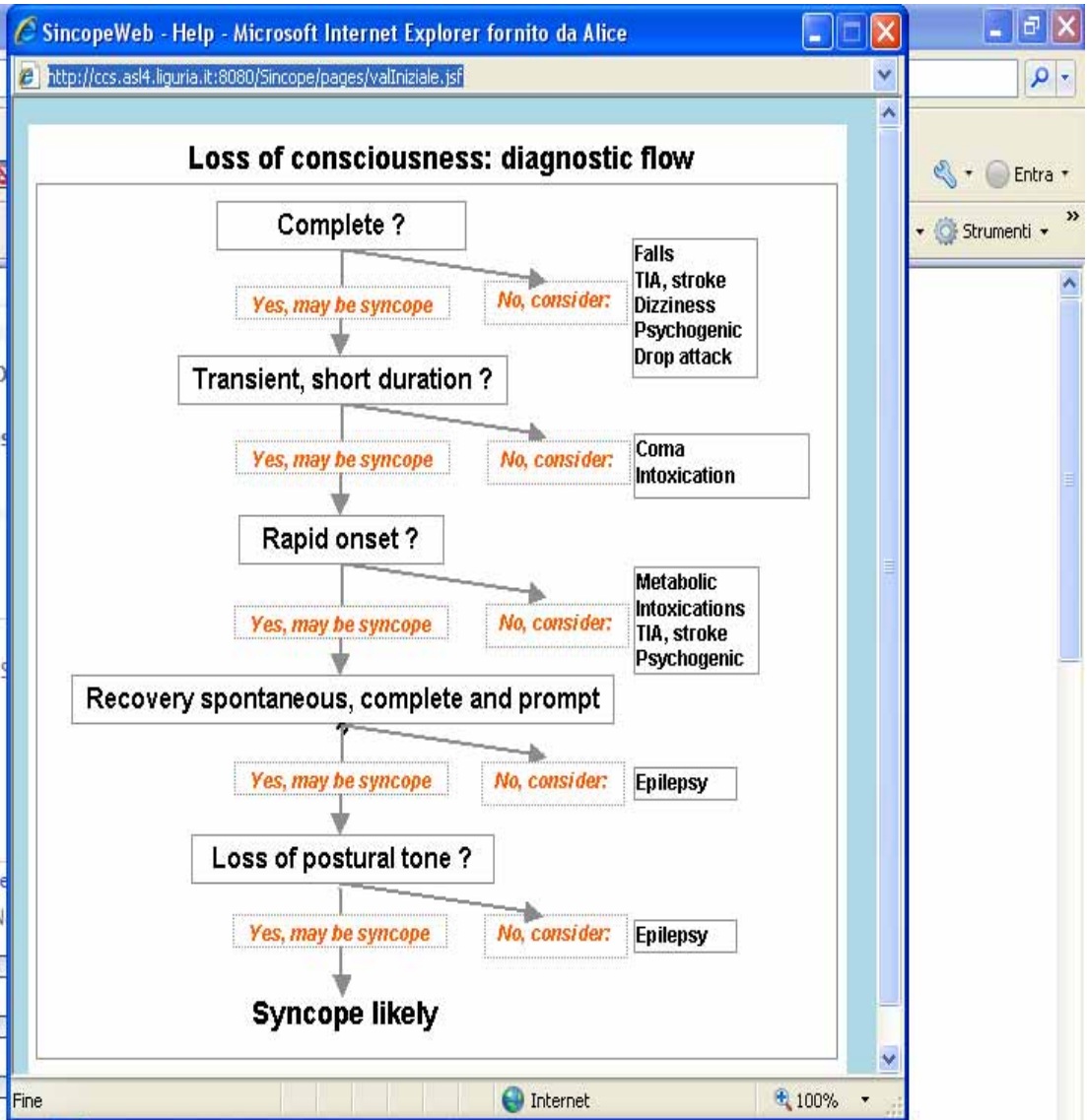
Durata sincopi (anni)

Descrizione della perdita di coscienza (attuale)

Descrizione	Si	No
Completa	<input type="checkbox"/>	<input type="checkbox"/>
Transitoria, breve durata	<input type="checkbox"/>	<input type="checkbox"/>
Inizio rapido	<input type="checkbox"/>	<input type="checkbox"/>
Recupero spontaneo, completo e rapido	<input type="checkbox"/>	<input type="checkbox"/>
Perdita tono posturale	<input type="checkbox"/>	<input type="checkbox"/>

*Cardiopatia strutturale

Presente



Registro GIMSI



Comitato Direttivo Registro GIMSI

Roma, 24 febbraio 2011



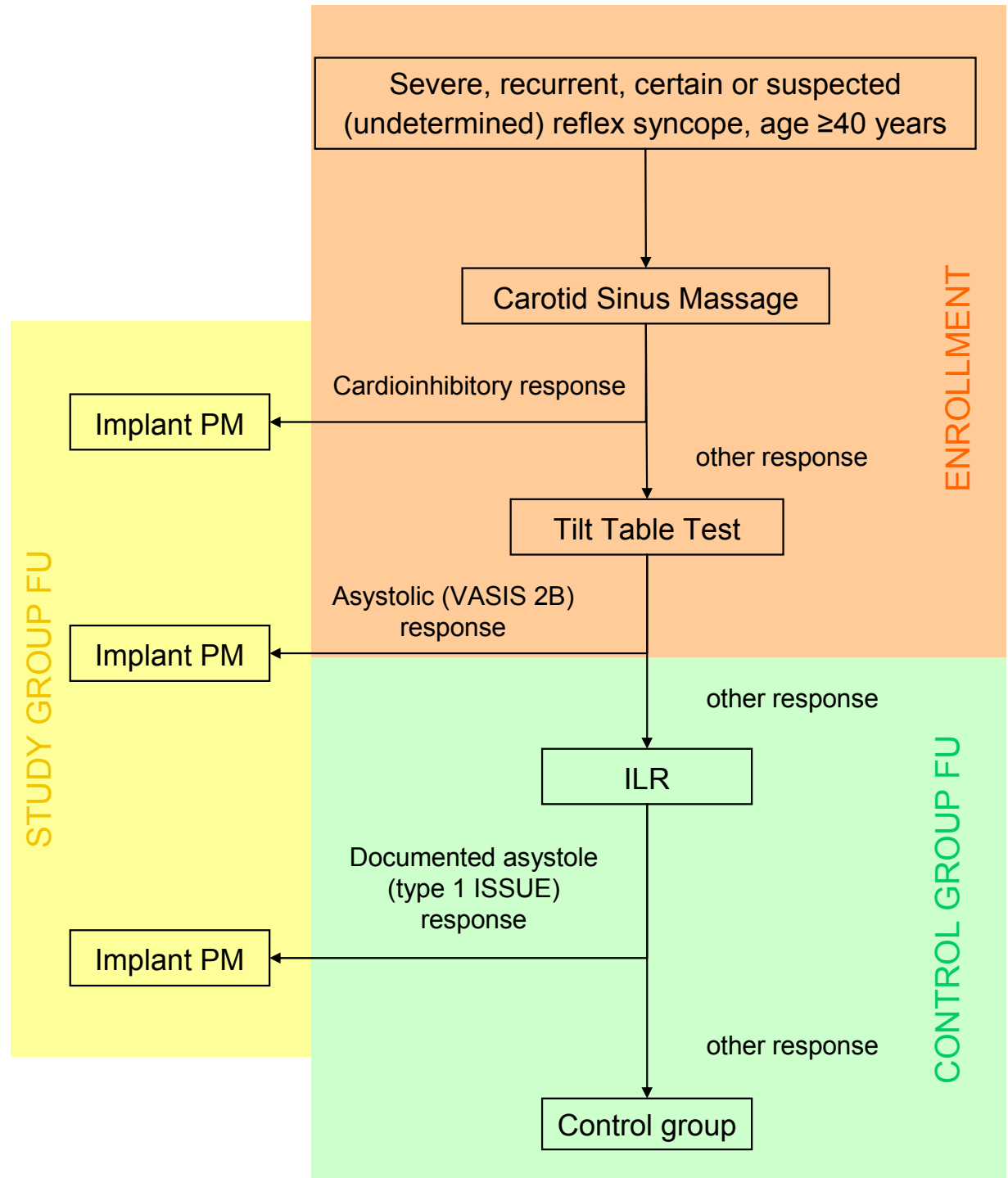
SUP 2 trial

Guideline-based pacing therapy for Reflex Syncope

Principal Investigator: M. Brignole

Syncope Unit Project 2 (SUP 2)

Study flow





Faint & Fall Clinic

Clinic Gastroenterology Clinic
③ Pulmonary Clinic

← Dermatology
↑ Elevators
↓ Rehabilitation Center





Faint & Fall Clinic



Faint algorithm at University of Utah

Faint initial assessment:

1. H&P exam
2. Orthostatic challenge
3. ECG

Questions

Actions

Admission criteria ?

Yes

In-hospital evaluation

No

Diagnosis certain ?

Yes

Treatment

No

Uncertain faint evaluation

Cardiac syncope likely or possible ?

Cardiac tests & monitoring

Cardiac syncope unlikely, recurrent or severe symptoms ?

Reflex tests & monitoring

Cardiac syncope unlikely, single/rare and mild ?

Reflex tests

Non-syncopal faint likely ?

Neuro/psycho evaluation

Faint Assessment

Diagnosis Path

▶ mb3 mb3


Patient Information

Faint Assessment

Legend

User Input

Summary

 Suggestion

Present Illness

Past Medical History

Medications

Allergies

Social History

Family History

Organ System

Physical Exam

Tests

CIRCUMSTANCES PRIOR TO THE EVENT

Triggered by emotional distress, fear, pain, instrumentation, blood phobia Y N U

Position

- In the supine position
- In the sitting position
- In the standing position
- None of the above

Circumstances

- Y N U During a meal
- Y N U Within 1 hour from a meal
- Y N U With head rotation during shaving
- Y N U With head rotation with a tight collar

Activity

- At rest
- During change in posture
- During exercise
- Immediately after exercise
- During or immediately after micturition
- During or immediately after defecation
- During or immediately after coughing
- During or immediately after swallowing

Preceding symptoms

- Y N U Nausea, vomiting, abdominal pain, feeling cold, or sweating
- Y N U Presence of other prodromes

Faint Assessment

Diagnosis Path

▶ mb3 mb3

Patient Information

Faint Assessment

Legend

User Input

Summary

Suggestion

Present Illness

Past Medical History

Medications

Allergies

Social History

Family History

Organ System

Physical Exam

Tests

ELECTROCARDIOGRAM

I have read the ECG and it showed: Pending Normal Abnormal Not Done

METABOLIC ASSESSMENT

O2 saturation: %

CBC & BLOOD CHEMISTRY

Findings:

Pending Normal Abnormal Not Done

ECHOCARDIOGRAM

I have reviewed the echocardiogram. Findings:

Pending Normal Abnormal Not Done

Faint Assessment

Assessment Path

▶ mb5 mb5

Patient Information

Faint Assessment

Present Illness

Past Medical History

Medications

Allergies

Social History

Family History

Organ System

Physical Exam

Tests

ELECTROCARDIOGRAM

Pending Normal Abnormal Not Done

Sinus bradycardia 40-50 bpm

LV hypertrophy

Sinus bradycardia <40 bpm or pauses >3 sec

Non-sustained VT

Second degree AV block, Mobitz 1

Sustained VT

Second degree AV block 2:1

Sustained supraventricular tachycardia

Second degree AV block, Mobitz 2

Atrial fibrillation

Third degree AV block

Atrial flutter

LBBB

WPW pattern

RBBB

Brugada pattern

RBBB+LAFB or RBBB+LPFB

ARVD pattern

Alternating BBB

Long QT pattern

Previous myocardial infarction

Short QT pattern

ST-T waves abnormalities

Pacemaker malfunction

Other findings (specify)

METABOLIC ASSESSMENT

O2 saturation: %

CBC & BLOOD CHEMISTRY


Pending Normal Abnormal Not Done


ECHOCARDIOGRAM ?

Pending Normal Abnormal Not Done

ADMISSION

Admission Determination

According to the data provided, and the most recent published AHA and ESC guidelines: 





- Hospital admission indicated
-  Hospital admission NOT indicated

Submit

UNCERTAIN DIAGNOSIS

Uncertain Diagnosis Determination

According to the data provided, and the most recent published AHA and ESC guidelines:

- Cardiac syncope is likely 
- Cardiac syncope is unlikely and there are recurrent or severe symptoms 
-  Cardiac syncope is unlikely and there are single/rare and mild symptoms 
- Non-syncopal faint is likely


Submit


ORDER TESTS

Cardiovascular Reflexivity Tests (Syncope Unlikely and Rare Symptoms)

Based on the data presented and the AHA and ESC published guidelines, the algorithm indicates that the following reflexivity tests be performed sequentially until a diagnosis is found

Carotid Sinus Massage

According to the algorithm, a Carotid Sinus Massage IS indicated 


-  Perform
- Don't perform


Carotid Sinus Massage Criteria

All of the following are present:

- Patient's age is > 40
- Absence of history of TIA or Stroke

Tilt Testing

According to the algorithm, Tilt Testing IS indicated 

-  Perform
- Don't perform

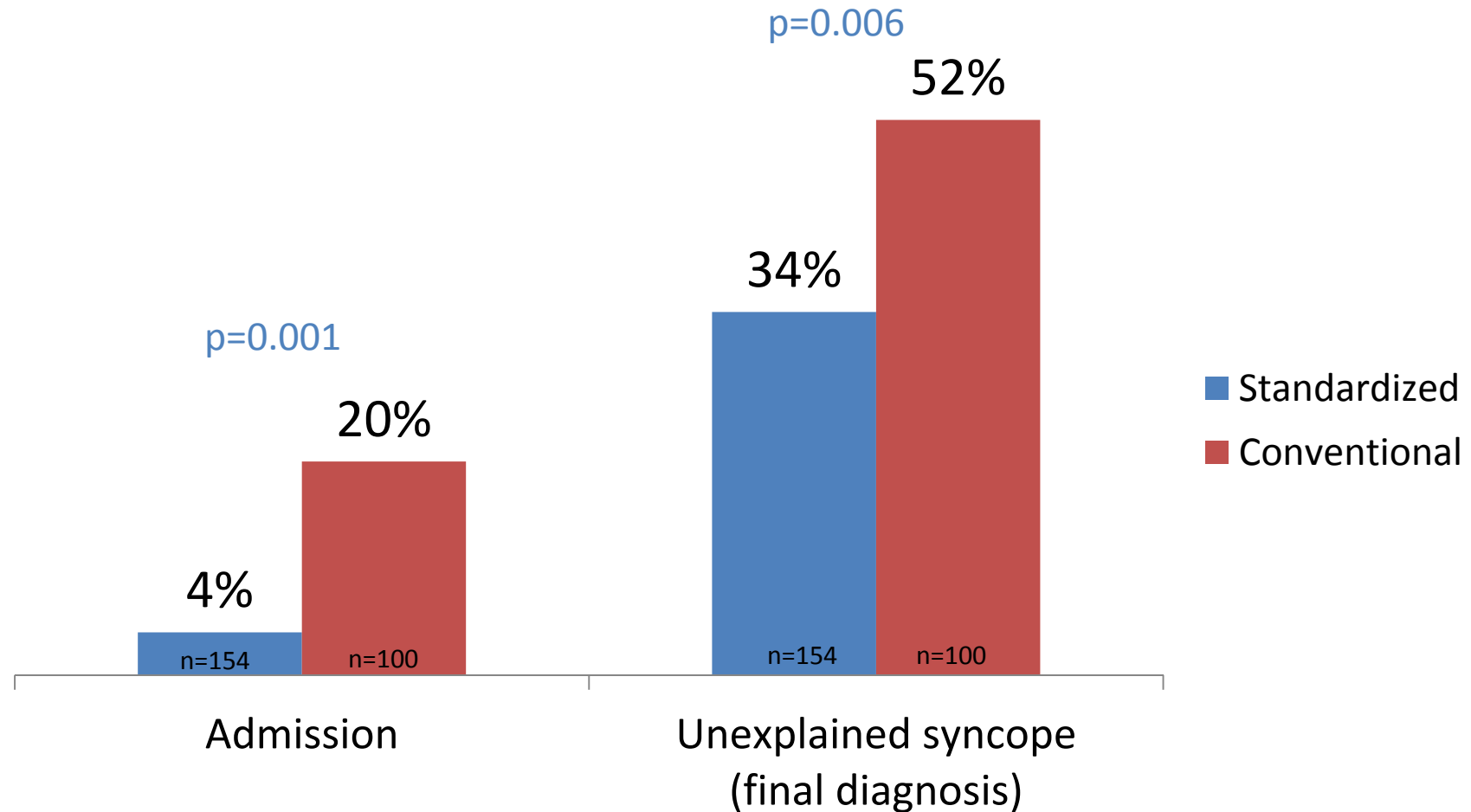
Faint evaluation at University of Utah Hospital, 2010

	Clinical practice		Faint-Algorithm	
	Admitted	Discharged	Admitted	Discharged
Patients (total n=254)	118 (46%)	136 (54%)	57 (22%)	197 (78%)
Serious Events within 7 days after visit; %	10 (8.5%)	5 (3.7%)	9 (16%)	6 (3.0%)

Faint Algorithm: Odds ratio for admissions: **-67%**

Faint & Fall Clinic, University of Utah Hospital, 2011

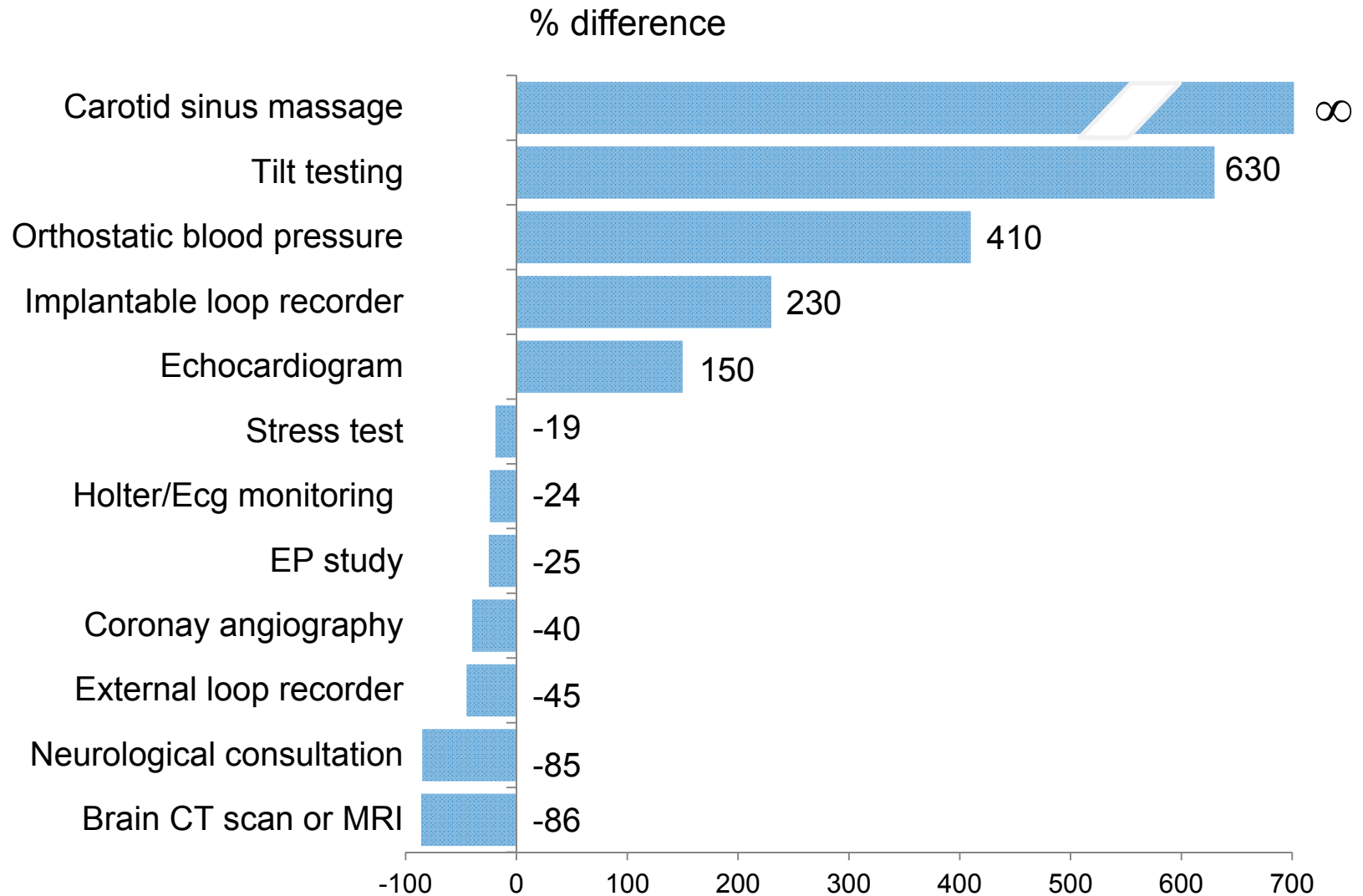
Standardized vs Conventional care



Sanders N et al. Standardized-care pathway versus conventional approach in the management of patients presenting with faint at the University of Utah: the faint and fall clinic experience. (in press)

Faint & Fall Clinic, University of Utah Hospital, 2011

Standardized vs Conventional care



Sanders N et al. Standardized-care pathway versus conventional approach in the management of patients presenting with faint at the University of Utah: the faint and fall clinic experience. (in press)

State-of-the-Art paper – JACC 2012

New concepts in the assessment of syncope

Michele Brignole and Mohamed H. Hamdan

- A standardized approach is undoubtedly the most important prerequisite for the delivery of the best and most cost-effective therapy in patients presenting with syncope.
- The long-term effects of such a new health care model on the rate of diagnosis and survival awaits future studies.