



# GUIDE TO SERVICES CARDIOLOGY DEPARTMENT

Azienda Sanitaria Universitaria Giuliano Isontina<sup>1</sup>

# Charter of Services

## CARDIOLOGY Department

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CARDIOTHORACOVASCULAR INTEGRATED ACTIVITY  
DEPARTMENT

Director: Prof. Gianfranco Sinagra

**Department of CARDIOLOGY**  
**School of Specialization in Cardiovascular Apparatus Diseases**

**Director: Prof. Gianfranco Sinagra**

Cattinara Hospital – Cardiological Hub – via Valdoni 7

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### **NURSING COORDINATORS:**

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**Cardiological Intensive Care Unit: Raffaella Di Meola**

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**Hemodynamics Room, Invasive Cardiology,**

**Outpatient Clinics: Cinzia Di Chiara**

Tel: 040 399 4998; Fax: 040 399 4876

e-mail: [cinzia.dichiara@asugi.sanita.fvg.it](mailto:cinzia.dichiara@asugi.sanita.fvg.it)

## USEFUL CONTACTS

## FAX

|   |                                  |                                  |
|---|----------------------------------|----------------------------------|
| <b>OUTPATIENT CLINICS SECRETARIAT (*)</b><br>ground floor   | 040 – 399 4865                   | 040 – 399 4878                   |
| <b>HOSPITALIZATION SECRETARIAT (*)</b><br>second floor  | 040 – 399 4875                   | 040 – 399 4003                   |
| <b>HOSPITALIZATION</b><br>second floor  | 040 – 399 4871                   | 040 – 399 4003                   |
| <b>CARDIOLOGICAL INTENSIVE CARE</b><br>third floor  | 040 – 399 4877                   | 040 – 399 4491                   |
| <b>DIAGNOSTIC AND INTERVENTIONAL<br/>HEMODYNAMICS (*)</b><br>third floor  | 040 – 399 4988                   | 040 – 399 4876                   |
| <b>ELECTROPHYSIOLOGY AND<br/>ELECTROSTIMULATION (*)</b><br>third floor  | 040 – 399 4133                   | 040 – 399 4876                   |
| <b>ECHOCARDIOGRAPHY (*)</b><br>ground floor   | 040 – 399 4837                   |                                  |
| <b>ARRHYTHMIA CLINIC</b><br><b>PACEMAKER CLINIC (*)</b><br>ground floor   | 040 – 399 4832<br>040 – 399 4828 | 040 – 399 4878<br>040 – 399 4878 |
| <b>HEART FAILURE, PULMONARY<br/>HYPERTENSION, STRUCTURAL DEFECTS<br/>AND CARDIOMYOPATHIES (*)</b><br>ground floor | 040 – 399 4125                   | 040 – 399 4878                   |
| <b>INTERVENTIONAL HEMODYNAMICS CLINIC<br/>(*)</b><br>ground floor   | 040 – 399 4988                   | 040 – 399 4876                   |
| <b>DIRECTORATE'S SECRETARIAT(*)</b><br>third floor  | 040 – 399 4477                   | 040 – 399 4153                   |

(\*) From 8.00 to 15.00, from Monday to Friday

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Cardiological Hub seen from the entrance in via Valdoni. There is the possibility of reaching it from the Cattinara hospital via an internal connection, following the signs.

## **MEDICAL STAFF**

### **Hospitalization and Outpatient clinics**

Dr. Laura Massa (Responsible of Hospitalization)

Dr. Lorena Barbieri (Responsible of the Divisional Clinic)

Dr. Alessandro Altinier

Dr. Francesca Brun

Dr. Cosimo Carriere

Dr. Matteo Dal Ferro (Responsible of Genetics Cardiovascular Disorders)

Dr. Marta Gigli

Prof. Marco Merlo (Responsible of Cardiomyopathy Clinic)

Dr. Alberto Pivetta

Dr. Alessia Paldino (PhD Student)

### **Diagnostic and interventional hemodynamics**

Dr. Andrea Perkan (Responsible)

Dr. Marco Anzini

Dr. Enrico Fabris

Dr. Serena Rakar

Dr. Giancarlo Vitrella

### **Cardiological Intensive Care**

Dr. Marco Milo (Responsible)

Dr. Aneta Aleksova

Dr. Annamaria Sorrentino

Dr. Davide Stolfo

Dr. Irena Tavcar

### **Non-invasive diagnostics and Echocardiography**

Dr. Renata Korcova (Responsible)

Dr. Antonio De Luca

Dr. Gabriele Secoli

### **Electrophysiology, Arrhythmology and Electrostimulation**

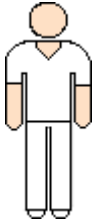
Dr. Massimo Zecchin (Responsible)

Dr. Elisabetta Bianco

Dr. Fulvia Longaro

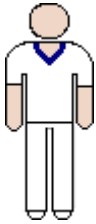
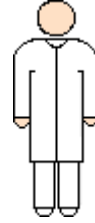
Dr. Luca Salvatore

## *THE COLORS OF OUR UNIFORMS*



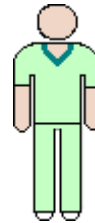
### **WHITE**

Doctors, biologists, chemists, physicists,  
pharmacists, psychologists



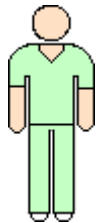
### **WHITE WITH BLUE EDGE**

Department Nurse and Technicians  
Heads (RID, RTD)



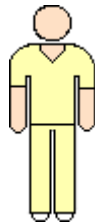
### **GREEN WITH DARK GREEN EDGE**

Nursing Coordinators



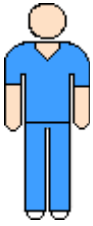
### **GREEN**

Nurses



### **LIGHT YELLOW**

General nurses

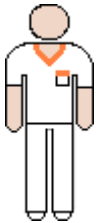


**INTENSE BLUE**

Auxiliaries

**INTENSE BLUE WITH WHITE  
EDGE**

OTA, OSS, technical operators in  
charge of assistance



**WHITE WITH ORANGE EDGE**

Administrative staff

**DARK GREEN**

Medical personnel in surgical clinics

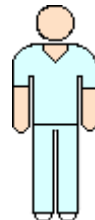


**LIGHT BLUE WITH WHITE EDGE**

Chief technician

**LIGHT BLUE**

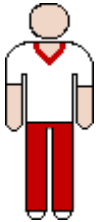
Radiology and laboratory technicians



**LIGHT BLUE WITH BLUE EDGE**

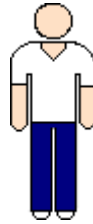
Physiotherapists, speech therapists,  
orthoptists, occupational therapists





### **WHITE T-SHIRT AND BLUE PANTS**

Internal transport personnel



### **WHITE WITH RED EDGE AND RED TROUSERS**

Contracting Company Personnel for the transport of patients

### **WHITE WITH BLUE FINISHES**

External company personnel – cleaning



Not all the personnel working in the facility are employed by the Department, in particular:

- rehabilitation is carried out by physiotherapists (light blue uniform with blue border),
- the transport of patients is carried out by the Accompanying Team of a private cooperative (burgundy trousers and white jacket)
- cleaning is carried out by a private company (uniform with white trousers and white jacket with blue finishes)
- meals are provided by another private company (white uniform)
- personnel in training, students of the university courses in Nursing, Obstetrics and Medicine (white uniform with identification tag)
- OSS students (white uniform with blue collar).



## **OUR MISSION**

RESPONDING TO THE NEEDS OF THOSE WHO CONTACT US WITH  
EXCELLENT PERFORMANCE AND ATTENTION TO THE PERSON

## **OUR MOTTO**

- 1) THE PATIENT IS OUR PRIORITY
- 2) OUR GOAL IS THE HIGHEST QUALITY
- 3) LISTENING, INVOLVEMENT AND COMMUNICATION
- 4) CONTINUOUS INNOVATION OF THOUGHT,  
ORGANIZATION AND TECHNOLOGY
- 5) APPROPRIATENESS AND SUSTAINABLE CHOICES
- 6) "I" AS PART OF THE "SYSTEM"

*Dear Sir/Madam,*

*We welcome you in our facility, we want to provide you with some information that will allow you to have a better stay. The staff will explain the services available to you.*

*If a relative of yours is hospitalized in the Cardiology Department, this brief presentation may be useful and help you deal better with the situation.*

## **INTRODUCTION**

The Cardiology Department of the Giuliano Isontina University Health Authority was established in 1966 at the Maggiore Hospital, under the direction of Prof. Fulvio Camerini.

Since 1999 it has been directed by Prof. Gianfranco Sinagra. In May 2003 it moved to the Cardiological Center of the Cattinara Hospital and maintained a Cardiological Consulting Service and a modern Outpatient Rehabilitation Service at the Maggiore Hospital.

It is a reference center for cardiomyopathies, heart failure and invasive cardiology. The research and teaching activity is intense. In 2010 the Laboratory of Molecular Cardiology and Translational Medicine was activated.

It hosts the School of Specialization in Cardiovascular Apparatus Diseases of the University of Trieste and multiple training and internship activities in the context of University Degree Courses, Masters and national and international professional activities.

More than 2,500 hospitalizations are carried out every year, 35% of which are for patients living outside the province and in other regions.

Cross-border collaboration activities in the cardiological emergency area (STEMI).

2/3 of hospitalizations under emergency and urgent conditions. Hub functions for the province of Gorizia and the low Friuli area.

Over 60,000 outpatient services in the context of highly specialized outpatient clinics, cardiological consultancy for inpatients and non-invasive diagnostics.

700 electrophysiology and electrostimulation procedures/year including subcutaneous defibrillator implantations, complex arrhythmia

ablations and electrode extractions.

1,800 diagnostic and interventional hemodynamic procedures including the treatment of structural defects (PFO, TAVI, Mitra Clip).

Mortality during hospitalization 1.5%; mortality after 3 months 3%.

Median Door-to-Balloon time 52' (30' if ECG preH); D2B <90 in 71% of STEMI cases.

Hospital mortality for IMA-STEMI 4.6%; after 30 days 4.7%; re-IMA after 30 days 1.6%.

## **CARDIOLOGY HISTORY IN TRIESTE**

**1964**, establishment of the Cardiovascular Pathophysiology Service at the Maggiore Hospital of Trieste, Director Prof. F. Camerini;

**1965**, establishment of the Center for the fight against Cardiovascular Diseases;

**1966**, practice of the technique of cardiac catheterization and cardioangiography for the study of vessels and cardiac function;

**1967**, first pacemaker implantation;

**1971**, establishment of the Division of Cardiology and Coronary Unit;

**1979**, establishment of the Register of Cardiomyopathies;

**1980**, first pharmacological intracoronary thrombolysis in STEMI;

**1983**, first coronary angioplasty;

**1987**, first experiences with beta-blockers in heart failure

**1990**, scientific collaboration with ICGEB, Prof Falaschi;

**1992**, implantation of the first defibrillator and the first percutaneous intervention is carried out in order to extract intracavitary electrodes;

**1994**, first acquisitions on the genetics of cardiomyopathies;

**1999**, new Director Prof. G. Sinagra;

**2003**, transfer to the Cardiological Hub-Cattinara Hospital;

**2003**, beginning of the emerging PCI program (primary or rescue) in STEMI

**2004**, transcatheter ablation of arrhythmias;

**2009**, first transfemoral TAVI and percutaneous PFO treatment;

**2009**, beginning of ablation of complex arrhythmias (AF and VT); introduction of an electroanatomical mapping system;

**2010**, the Cardiology Department hosts the university postgraduate specialization school;  
**2010**, Remote Monitoring device activation (via web)  
**2011**, beginning of activity of the Laboratory of Molecular Cardiology-Centre for Translational Cardiology in collaboration with ICGB  
**2012**, first percutaneous intervention for the treatment of mitral insufficiency (mitral clip) and first videoscopic intervention for epicardial pacemaker-defibrillator implantation;  
**2013**, first fully subcutaneous ICD implantation;  
**2015**, first percutaneous leadless pacemaker implantation;  
**2016**, the new hemodynamics room was activated for hybrid procedures and first mitral valve-in-valve surgery;  
**2018**, first endo-epicardial ablation with ECMO support  
**2019**, introduction of the Rhythmia electrophysiological mapping system and Hisiana Stimulation  
**2020**, PTCA program activation with IMPELLA support


 REGIONE AUTONOMA FRIULI VENEZIA GIULIA  
 Azienda Sanitaria Universitaria  
 Integrata di Trieste



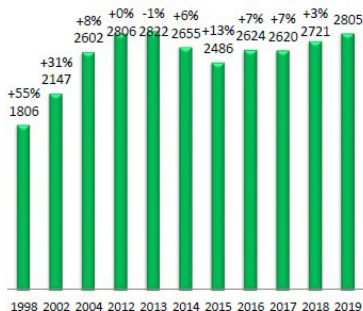
**ASUITS**  
 Dipartimento CardioToracoVascolare - S.C. Cardiologia  
 Direttore: Prof. G. Sinagra

Fonte dati: BC

## Ricoveri (Ordinari + DH)

1998 vs 2002 vs 2004 vs 2012 → 2019

Ricoveri Totali



Attrazione  
su pazienti non residenti



*[Hospitalizations (ordinary + Day Hospital)*

*1998 vs 2002 vs 2004 vs 2012-2019*

*Total hospitalizations    Attraction of non-resident patients]*

## WHAT TO BRING TO THE HOSPITAL

### **Personal documents:**

FOR CITIZENS RESIDING IN THE EUROPEAN UNION:

- Identity document
- Health card issued by the Local Health Authority
- Tax Identification number
- Hospitalization proposal (if requested by the hospital)

FOR FOREIGN CITIZENS WHO ARE NOT REGISTERED IN THE NATIONAL HEALTH SYSTEM AND WHO ARE NOT RESIDING IN ITALY:

- passport and/or identity card, ISI form and/or permit of stay

### **Clinical Documentation:**

- Any diagnostic tests, medical records, previous health records and current therapy
- If the medicines you have taken are not available in the ward, at the time of hospitalization, please hand your therapy over to the medical and nursing staff who will check its integrity and expiry date and then administer it according to the usual home therapy, if confirmed by the doctor.

### **Personal effects:**

- Personal linen, dressing gown, slippers, towels
- Necessary for daily hygiene.

## **LOCATION AND HOW TO REACH US**

### **Cattinara Hospital**

Cardiological Hub, via P. Valdoni no. 7, CAP 34149, Trieste.

✓ **GROUND FLOOR: Clinics and Non-invasive Diagnostic**

**Sections** (Echocardiography, Electrocardiography, Holter)

✓ **II FLOOR: Cardiology hospitalization**

✓ **III FLOOR: Cardiological Intensive Care**

**Diagnostic and interventional Hemodynamics**

**Interventional electrophysiology and**

**electrostimulation**

**Ergometry clinic, Tilting test, Cardio-pulmonary**

**test**

## VISITING HOURS FOR RELATIVES

### HOSPITALIZATION

|                 |             |
|-----------------|-------------|
| Monday - Sunday | 16.00-17.30 |
|-----------------|-------------|

### CARDIOLOGICAL

### INTENSIVE CARE

|                 |               |
|-----------------|---------------|
| Monday – Sunday | 7.00 - 7.30   |
| and holidays    | 12.00 - 13.00 |
|                 | 17.00 - 19.00 |

Any permits in other time slots can be agreed with the staff of the facility. Please bear in mind that this is an emergency department, patients with serious and acute pathologies are treated and they need rest and timely interventions, therefore we ask you to respect two fundamental rules:

- maximum 2 people are allowed to visit the patient at a time
- leave the ward and wait in the waiting room, whenever requested.

## **RULES DURING COVID-19 PANDEMIC**

Visitors can bring personal belongings to their relatives, which will be handed over to the staff and then to the patients. There is a video intercom for announcing cardiology-cardiac surgery or secretariat (from 7.30 to 15.00 from Monday to Friday) on the second floor and the coronary intensive care unit on the third floor. By telephone appointment, the medical/nursing staff of the ward can authorize the entry of visitors, maximum one visitor per patient per day, after triage to be carried out at the main entrance of Cattinara (showing the green-pass) and in compliance with the covid-19 procedures for a limited time (maximum 30 minutes). On the other hand, it is possible to use video calls either with the patient's personal means or with a tablet provided by the ward.



## **INTERVIEW WITH RELATIVES**

During the covid-19 pandemic, communication takes place by telephone as the doctor updates the family on the patient's clinical conditions and the nursing staff on any non-medical aspects.

To be called back, leave your telephone number:

- In the Hospitalization Secretariat from 7.30 to 14.45 from Monday to Friday.

- In the Cardiology Department at other times.

-In the Cardiological intensive care unit for patients hospitalized there.

This procedure will be appropriately modified at the end of the pandemic.

## **CARDIOLOGICAL INTENSIVE CARE UNIT**

**Location:** III floor of the Cardiological Hub of Cattinara Hospital

**Responsible:** Dr. M. Milo

**Nursing coordinator:** R. Di Meola

**1 doctor is always present 24/7.**

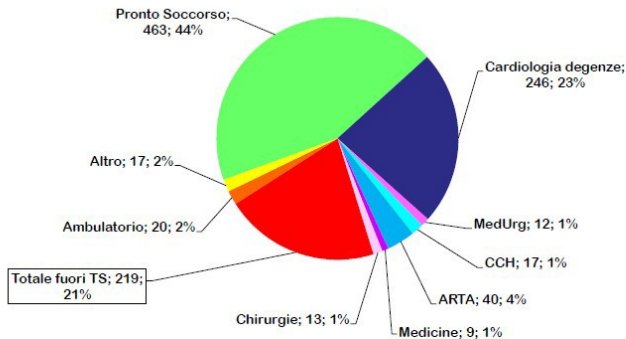
The Cardiological Intensive Care Unit is equipped with 6 intensive care places, 2 dedicated isolation and/or COVID-19 places and 2 semi-intensive care places, divided into boxes with 1 or 2 beds. Critical patients with the need for intensive monitoring are managed. More than 1,000 patients are hospitalized each year suffering from the following pathologies:

- STEMI/NSTEMI acute coronary syndromes 40%
- Acute Heart Failure 10%
- Threatening Complex Arrhythmias 20 %
- Massive Pulmonary Embolism Aortic Dissection and Cardiac Tamponade 5%
- Other pathologies 25%

Attività di monitoraggio e reportistica 2019

(F.Boneta, R. Cernigoi, G. Ciarmatore, S.Cignola, I.Geromella, D.Nait, P.Nardini, S.Martino, L.Skerli)

Provenienza 2019 6



*[Monitoring and reporting activities 2019]*

In the Cardiological Intensive Care Unit there is the possibility of advanced intensive support through the use of invasive hemodynamic monitoring, aortic counterpulsation, ultrafiltration and hemodialysis, mechanical ventilator supports, rapid access to ECMO.

It is a reference center for the Giuliano Isontina area. 35% of the patients reside outside the province or outside the region.

A direct teletransmission system of the electrocardiogram allows direct access to the Hemodynamics Room for patients with STEMI, notified by the emergency number 118 and by the cross-border health system.

The medical and nursing activity is organized around the clock, all personnel are in possession of the Basic Life Support Defibrillation (BLS-D) certification and all personnel of Cardiological Intensive Care Unit and Invasive Cardiology Rooms are possession of the Advanced Cardiac Life Support (ACLS) Certification. The entire clinical and

organizational activity is governed by Protocols, Procedures and Guidelines, which can be consulted quickly and periodically updated.

The Facility provides consultancy service to the Anesthesia, Resuscitation and Antalgic Therapy Department (ARTA) and to the Emergency Department. Many of the clinical scenarios shared with the latter two Departments are governed by agreed protocols (hypothermia protocol in patients who survived cardiac arrest, chest pain management protocol and the arrhythmic patient in the emergency department).

There is constant monitoring of the activity with a database that is constantly updated and managed by the nursing staff, in compliance with current legislation on privacy.



The Department has been recently accredited according to the operating standards of the European Society of Cardiology (ESC).

## **DIAGNOSTIC AND INTERVENTIONAL HEMODYNAMICS UNIT**

**Location:** III floor of the Cardiological Hub of Cattinara Hospital

**Responsible:** Dr. A. Perkan

**Nursing coordinator:** Dr. C. Di Chiara

The Diagnostic and Interventional Hemodynamics Unit is mainly dedicated to patients hospitalized at the Cardiology Department of Trieste and represents a regional reference for diagnostic activity and minimally invasive therapeutic interventions using catheters that are inserted through the skin and along the vessels up to the heart.

Over 1,800 procedures and over 600 percutaneous interventional cardiology procedures are performed each year for the treatment of coronary heart disease and structural defects.

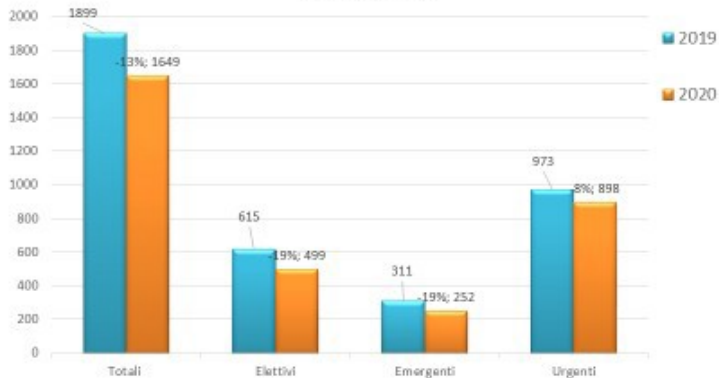
These procedures are performed in the Hemodynamics Rooms and are represented by coronarography, cardiac catheterization, ventriculogram, cardiac biopsy and arteriogram of the various vascular districts and above all by balloon dilatation and stent implantation operations on the coronary arteries and other arteries. Transfemoral aortic valve prosthesis implantations (Transcatheter Aortic Valve

Implantation or TAVI) are also performed for the treatment of aortic valve diseases, mitral clip implantations for the treatment of mitral insufficiency and percutaneous closure of congenital heart defects (foramen ovale, heart disease with shunt).Both the radial (over 80%



**ASUGI-TS**  
 Dipartimento CardioToracoVascolare - S.C. Cardiologia  
 Direttore: Prof. G. Sinagra

**S.S. EMODINAMICA E DIAGNOSTICA INTERVENTISTICA**  
**(Resp. Dott. A. Perkan; C.I. C. Di Chiara)**  
**Procedure stratificate per priorità**  
**2019 vs 2020**



7

procedures) and the femoral approaches are used for the procedures. For these interventions, 2 Hemodynamics Rooms are active, specifically configured for cardiovascular use, both completely digitalized and also suitable for carrying out cardiac surgical interventions in case of emergency. The rooms are located in very close proximity to the areas dedicated to cardiological intensive and sub-intensive care, so as to guarantee the maximum timeliness of invasive therapeutic interventions in patients at risk. In the event of an emergency, a connection via a dedicated lift guarantees rapid

transport to one of the two operating theaters of the Cardiac Surgery Unit located on the first floor. A team is available for interventions 24 hours a day, every day of the year, so as to always guarantee support in case of emergency. Interventions are carried out in collaboration with particularly expert technical and nursing staff. Patients who have to carry out invasive diagnostic or therapeutic investigations at the Invasive Cardiology Section are hospitalized the day before or on the day of the procedure in the Cardiology Department. A preferential route always guarantees access to the Cardiological Intensive Care Unit. A structured Heart Team is active for the sharing of patients suffering from valvular pathologies to undergo minimally invasive operations on the aortic valve (transfemoral, transaortic or transapical TAVI) or on the mitral valve (mitral clip). *[Procedures according to priorities 2019 vs 2020]*



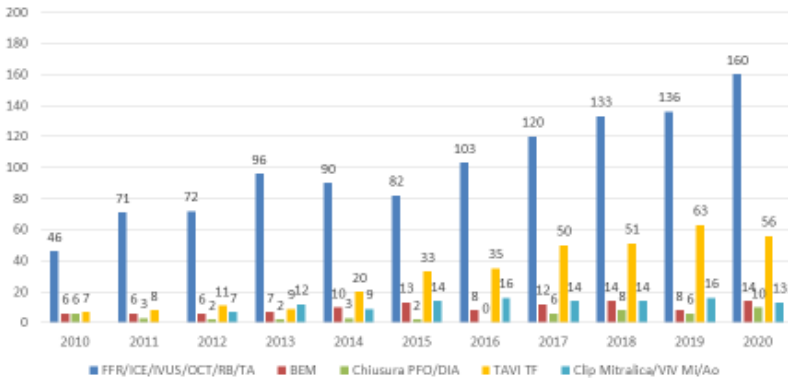
**DAI CARDIOTORACOVASCOLARE**  
 Direttore: prof. Gianfranco Sinagra  
 Registro della PCI emergente in corso di STEMI a TS  
**Provenienza dei pazienti**



*[Origin of patients 2019 vs 2020]*

**S.S. EMODINAMICA E DIAGNOSTICA INTERVENTISTICA**  
 (Resp. Dott. A. Perkan; C.I. C. Di Chiara)

**PROCEDURE - DETTAGLIO**  
 2010 – 2020



8

*[Procedures - details 2010-2020]*

## ELECTROPHYSIOLOGY AND ELECTROSTIMULATION

**Location:** III floor of the Cardiological Hub of Cattinara Hospital

**Responsible:** Dr. M. Zecchin

**Nursing coordinator:** Dr. C. Di Chiara

The Electrophysiology and Electrostimulation Laboratory performs around 900 procedures a year, in particular:

Electrostimulation Procedures:

- Pacemaker (PM) implantations and replacements
- Implantable Defibrillator (ICD) implantations and replacements
- Cardiac Resynchronization (CRT) device implantations and

replacements

#### Diagnostic and Interventional Electrophysiology Procedures:

- Electrical Cardioversions
- Intracavitary electrophysiological studies
- Transcatheter ablation of supraventricular tachycardia
- Transcatheter ablation of atrial fibrillation
- Transcatheter ablation of ventricular tachycardias
- Extraction procedures of chronically implanted electrodes
- Implantation of a device for continuous monitoring of the electrocardiogram (Loop Recorder)
- Subcutaneous implantation of a reservoir for continuous intravenous infusion (port-a-cath)

#### **ELECTROSTIMULATION**

More than 500 pacemaker (PM) and defibrillator (ICD) implantations are performed annually (about 40% with resynchronization (CRT)). In 2013, the activity of implantation with S-ICD (subcutaneous defibrillator without intracavitary electrodes) began. PMs, ICDs and CRTs are placed subcutaneously (generally in the left subclavicular area) with a small operation under local anesthesia and connected to the heart chambers through one or more permanent leads. The duration of the operation can be variable depending on the device and the anatomical variability.





On the left of the screen, image of the three-dimensional Ensite mapping of the left atrium during the transcatheter ablation procedure of an atrial tachycardia. On the right of the screen, the three-dimensional reconstruction obtained from cardiac magnetic resonance images. Below, the electrical signals coming from the catheters inside the heart chambers.

## DIAGNOSTIC AND INTERVENTIONAL ELECTROPHYSIOLOGY

The Electrophysiological Study (SEF) allows to highlight both the anomalies of the electrical impulse conduction system and a possible excessive excitability of the myocardial tissue, through the insertion of electrocatheters by central venous or femoral arterial route. In many cases, the procedure is followed by treatment with radiofrequency ablation, using leads, capable of neutralizing that small part of tissue responsible for the arrhythmia through the delivery of high-frequency electromagnetic waves. Over 80 catheter ablation procedures are performed annually.

Electrophysiological study and transcatheter ablation are performed for the treatment of supraventricular arrhythmias (paroxysmal

tachycardias, Wolff-Parkinson-White syndrome, atrial flutter, atrial fibrillation) and ventricular arrhythmias (outflow tract ventricular extrasystole, idiopathic ventricular tachycardias and reentrant ventricular tachycardias). The three-dimensional mapping system is used in the most complex ablation procedures (atrial fibrillation, some atrial tachycardias, ventricular arrhythmias).

The observed results (efficacy) and the rare complications are fully in line with the international reference data.

Procedures are performed (with the exception of cardioversions and device replacements) under ordinary hospitalization with one or more nights of hospitalization. Patients undergoing more complex procedures (ablation of atrial fibrillation or ventricular tachycardia, electrode extractions) are generally kept under observation in the Cardiovascular Intensive Care Unit for 12-24 hours.

Patients from outside the Cardiovascular Department are formally transferred back and managed (according to the protocol) in the ward of origin; if necessary, the Patient can remain in the Cardiology Department at the discretion of the Healthcare personnel.

## **HOSPITALIZATION**

**Location:** II floor of the Cardiological Hub of Cattinara Hospital

**Responsible:** Dr. L. Massa

**Nursing coordinator:** D. Beltrame

It has 30 beds (including 2 dedicated COVID-19 beds) and 2 Day-Hospital beds.

Each room is equipped with 2 beds and a complete bathroom with shower. There is a television set in every room.

Patients who are not bedridden can take advantage of a living room to have meals, watch TV, read books and magazines from the library or meet relatives and visitors. There are vending machines for coffee and soft drinks. Approximately 2,400 hospitalizations/year are carried out in the inpatient section, 35% of which are non-residents. 35% are planned hospitalizations mainly for scheduled procedures of Invasive Cardiology (haemodynamics or electrophysiology), 43% are urgent admissions of unstable or non-dischargeable patients from the Emergency Room or from Outpatient Cardiological Clinics or other Departments or other Hospitals; the remaining 23% are patients transferred from the Cardiological Intensive Care Unit for the post-acute phase and for active mobilization and pre-discharge rehabilitation.

90% of the beds are equipped with advanced telemetric monitoring which allows the evaluation of the arrhythmic profile and electrocardiogram variations (onset of arrhythmias, ischemic modifications of the ECG trace) within 24 hours; 14 beds also provide continuous monitoring of oximetry (constant measurement of the percentage of oxygen in the blood).

The average stay is 5 days.

Discharge from hospital takes place mainly at home, but continuity of home care can be activated and in particular conditions and pathologies it is agreed with the patient and the family the transfer to the Healthcare Residences (RSA), to the accredited Rehabilitation Facility Casa di Cura Pineta del Carso or to the Hospital of origin.

For patients hospitalized for coronary syndrome, revascularized and with unstabilized heart failure, an intra-hospital Cardiological Motor Rehabilitation program is envisaged in collaboration with Physiotherapists holding a specific training in the cardiovascular field.

Upon discharge from hospital, the Medical and Nursing personnel illustrate the discharge letter to the patient, including the results of the investigations (and the CD for the angiographic procedures or the pacemaker/ICD tag for electrophysiology implantations), the therapeutic plan (for the medicines to be taken) and the subsequent clinical check-up. The medicines for the first cycle of treatment is provided by the hospital pharmacy.

A consolidated Organizational Model guarantees that upon discharge from hospital the patient is taken in charge both by the General Practitioner and by his/her Cardiologists and by the Continuity of Home Care Service at the local Healthcare Authority and in particular by the Cardiovascular Center with which there are common synergies and management protocols, integrated and periodically updated.



## Special situations

In the hospital rooms there are medical equipment (heart rate monitors, infusion pumps, etc.) that emit acoustic and light signals: their operation is controlled by the staff.

**Sometimes the alarms are very sensitive and go off even when there is no real danger, so it is important that family members do not become alarmed. Staff will check the situation and act accordingly.**

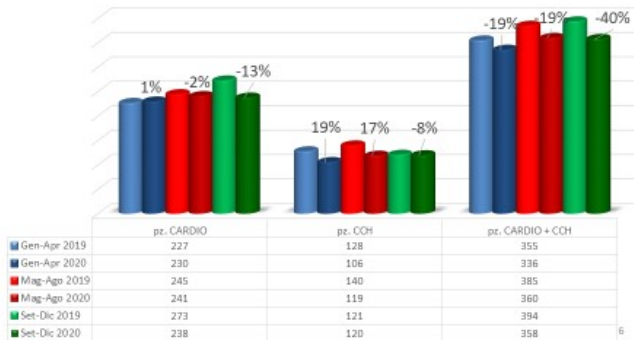
**Due to possible interference with electro-medical devices, it is important not to use mobilephones, except for the time strictly necessary for short communications. In any case, please turn off all device ringtones.**



ASUGI-TS  
Dipartimento CardioToracoVascolare - S.C. Cardiologia  
Direttore: Prof. G. Sinagra

### RIABILITAZIONE DEL CARDIOPATICO TRATTAMENTI IN REGIME DI RICOVERO CARDIOLOGIA E CARDIOCHIRURGIA

Gen-Apr 2019 vs 2020 - Mag-Ago 2019 vs 2020 - Set-Dic 2019 vs 2020



*[Patient rehabilitation - Inpatient treatment - Cardiology and heart surgery – Jan-Apr 2019 vs 2020, May-Aug 2019 vs 2020, Sep-Dec 2019 vs 2020]*

## **ECHOCARDIOGRAPHY**

**Location:** ground floor, Cardiological Hub of Cattinara Hospital - it is open from Monday to Friday from 8.00 to 15.00

**Responsible:** Dr. R. Korcova

**Nursing Coordinator:** C. Di Chiara

Echocardiographic examinations are performed in order to identify and investigate cardiovascular clinical problems. About 10,000 examinations are performed annually. The echocardiographic examination usually consists of a one-dimensional, two-dimensional, 3D study and an echo-Doppler examination (pulsed, continuous, color and tissue techniques), necessary for a qualitative and quantitative evaluation of the cardiac structures and of the great vessels and of the intracardiac blood flows.

On specific indications, a transesophageal echocardiogram is performed (for the best visualization of the heart chambers and valves, including the presence of intracavitary thrombi, aortic pathologies, endocardial vegetations and valve prosthetic dysfunctions) or an echo-stress, both physical (echocardiography during exercise on a cycle ergometer) and pharmacological (generally with dobutamine) for the recognition of ischemic or vital myocardium. In the laboratory, three-dimensional echocardiograms can be performed on selected patients both from a transthoracic and transesophageal approach.

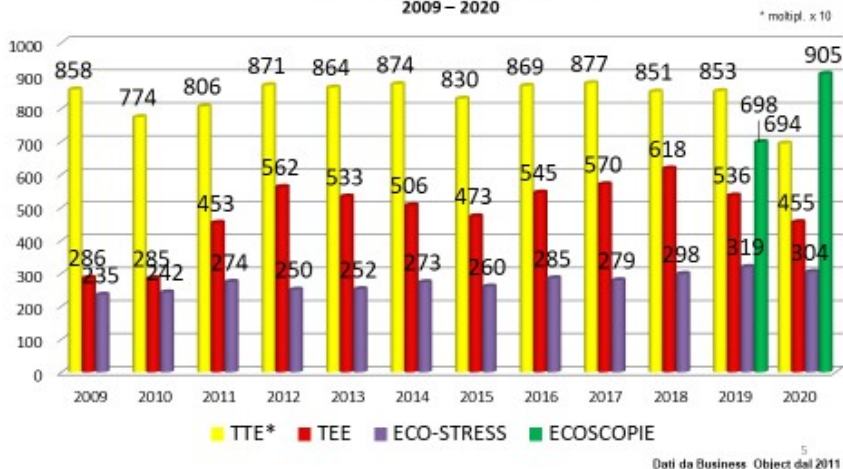
In situations of insufficient echocardiographic image quality and not adequate to answer the specific question, an echographic contrast agent is available which allows to opacify the cardiac chambers and outline the contour of the ventricular wall for a more accurate evaluation of the zonal kinetics and the global pump function.

A digitized image archiving system (PACS) guarantees the connection between the echocardiographs, digitized archiving and remote viewing, with the possibility of producing patient CDs with the images stored in DICOM format, readable from any PC.

Access to procedures also takes place via the booking center-CUP, according to a shared prioritization system which is periodically audited.



Three-dimensional echocardiogram from transthoracic approach showing a normal heart



*[Echocardiograms - Echocardiography (Cardiological Hub) -  
 Responsible Dr. B. Pinamonti - 2009-2020]*

## ELECTROCARDIOGRAPHY

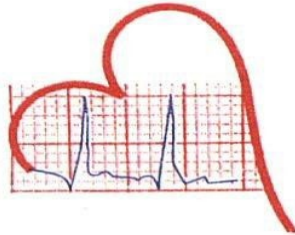
**Location:** ground floor, Cardiological Hub of Cattinara Hospital  
 The Electrocardiography Laboratory performs over 30,000 ECG recording/year. Cardiology performs and interprets electrocardiograms for:

- Patients hospitalized or followed on an outpatient basis by the Cardiology Department;
- Internal patients hospitalized in other facility of the Local Health Authority;
- External patients sent by General Practitioners (with referral and appointment via the booking center-CUP) or by the Emergency Room.



A computerized transmission and archiving system allows remote reporting, serial comparison of traces and connection with local facilities and the Cardiovascular Center and the IRCCS Burlo Garofolo. Access to the procedures also takes place via the booking center-CUP, according to a prioritization system shared with the Cardiovascular Center and periodically audited.

**During the COVID-19 pandemic, the electrocardiograms of the pre-intervention modules are performed at the Poliambulatori of Cattinara to reduce travel and gatherings of users.**



## **HOLTER ELECTROCARDIOGRAPHY**

**Location:** ground floor, Cardiological Hub of Cattinara Hospital

The Holter Electrocardiography Laboratory carries out over 3,000 recordings/year with devices that allow monitoring between 24 hours and 3 months, with 3 and 12 leads.

Advanced software is available for the analysis of Heart Rate Variability, QT variability and dispersion (QT dynamism) and for ST changes and morphology of 12-lead arrhythmias.

The Holter exam, i.e. the prolonged monitoring of the electrocardiogram, makes it possible to detect and quantify paroxysmal arrhythmias not present on a simple electrocardiogram, confirm or exclude an arrhythmic origin of the symptoms felt by the patient, know the heart rate values in 24 hours and any episodes of myocardial ischemia.

The Holter Clinic also applies the pressure Holter, a device capable

of detecting blood pressure, both during the day and at night (by means of a cuff that inflates and deflates) in order to be able to optimize antihypertensive therapy in patients who have difficulty controlling blood pressure.

Access to the Holter procedures for arrhythmic pathologies also takes place via the booking center-CUP, according to a shared prioritization system which is periodically audited.

## **ERGOMETRY, CARDIOPULMONARY TEST, TWA AND TILTING TEST**

**Location:** third floor, Cardiological Hub of Cattinara Hospital

The Ergometry and Ergospirometry Laboratory for the assessment of oxygen consumption carries out around 1,500 tests/year.

A stress test is performed before and after a cardiac rehabilitation cycle and, for diagnostic purposes, in patients with known or suspected heart disease to search for inducible ischemia or exercise-induced cardiac arrhythmias.

The examination is always preceded by a cardiological visit.

The tilting test is an examination indicated in very selected cases of recurrent syncope in which the clinical evaluation, prolonged ECG monitoring and neurological investigations are negative.

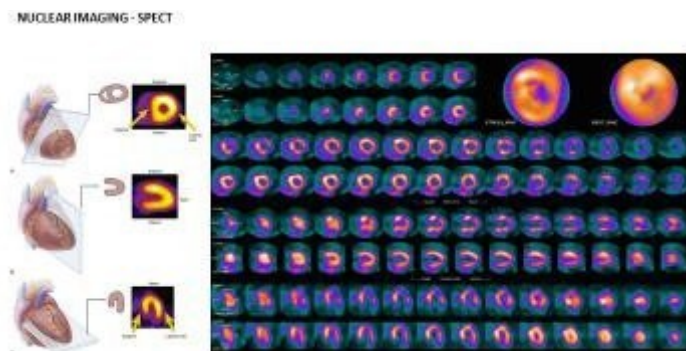
The exam is requested by the Doctors of the Cardiology Department, of the Emergency Medicine and of the Neurological Clinic. The indications given by the General Practitioners or by other Facilities of the Giuliano Isontina University Health Authority must always be shared with the Responsible of the Arrhythmia or Pacemaker Clinic. In

the Ergometry Clinic it is also possible to perform the analysis of the T-wave Alternans (TWA), which is useful in assessing the arrhythmic risk in selected patients with heart failure or previous myocardial infarction. The examination is requested exclusively by the Doctors of the Cardiology Department.

## MYOCARDIOSCINTIGRAPHY

This examination is performed by medical and nursing staff of the agreed clinics and in the Nuclear Medicine premises.

Since 2015, in collaboration with the Nuclear Medicine department, the activity of Nuclear Cardiology has continued. It is accessible after notification by a Cardiologist specialist.

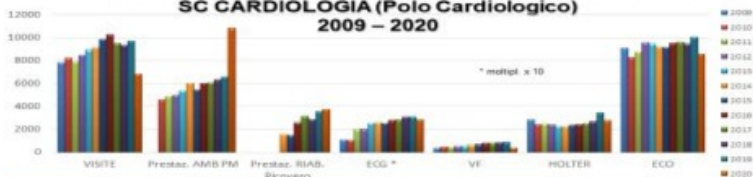


## **DIVISIONAL CLINIC**

**Location:** ground floor, Cardiological Hub of Cattinara Hospital, it is open from Monday to Friday from 8.30 to 15.00

The Divisional Cardiology Outpatient Clinic is dedicated to "internal" patients hospitalized in other Hospital facilities (pre-operative modules, peri-postoperative management, people hospitalized in internal medicine wards) and "external" patients who need a pre-hospitalization or post-discharge cardiological assessment from our or other facilities of the Giuliano Isontina University Health Authority. It carries out about 3,000 visits/year. The Consulting activity for inpatients is regulated by a specific procedure and document, approved by the Health Department and shared within a hospital-university multidisciplinary working group which establishes types, objectives, methods and times for carrying out the consultancy. The consultancy report as well as all the diagnostic tests are available on the Cardionet-G3-Report Viewer system.

**ATTIVITÀ AMBULATORIALE E DIAGNOSTICA NON INVASIVA  
SC CARDIOLOGIA (Polo Cardiologico)  
2009 – 2020**

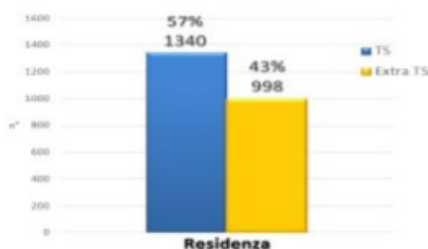


|      | VISITE     | PREST. AMB PM | PREST. RIAB. Ritorno | ECG   | VF       | HOLTER ECG | ECO                |
|------|------------|---------------|----------------------|-------|----------|------------|--------------------|
| 2009 | 7795       |               |                      | 11073 | 597      | 2850       | 9097 (triaploghi)  |
| 2010 | 9215       | 4583          |                      | 10406 | 495      | 2429       | 8520 (triaploghi)  |
| 2011 | 7932       | 4909          |                      | 20466 | 489      | 2478       | 8790 (triaploghi)  |
| 2012 | 8453       | 4885          |                      | 20331 | 535      | 2451 (BO)  | 9518 (triaploghi)  |
| 2013 | 8932 (BO)  | 5364          |                      | 25139 | 564      | 2249       | 9411 (triaploghi)  |
| 2014 | 9151 (BO)  | 6090          | 1555                 | 24084 | 653      | 2247       | 9503 (triaploghi)  |
| 2015 | 9842 (BO)  | 5476          | 1482                 | 25300 | 704 (BO) | 2382       | 9134 (triaploghi)  |
| 2016 | 10180 (BO) | 6025          | 2564                 | 27805 | 816 (BO) | 2450 (BO)  | 9519 (triaploghi)  |
| 2017 | 9308 (BO)  | 6082          | 3137                 | 28006 | 792 (BO) | 2318 (BO)  | 9818 (triaploghi)  |
| 2018 | 9326 (BO)  | 6310          | 2861                 | 31126 | 857 (BO) | 2714 (BO)  | 9439 (triaploghi)  |
| 2019 | 9723 (BO)  | 6575          | 3547                 | 30880 | 897 (BO) | 3475       | 10085 (triaploghi) |
| 2020 | 6430 (BO)  | 5065          | 3772                 | 28333 | 598 (BO) | 2768       | 8600 (triaploghi)  |

| INCREMENTI PERCENTUALI |          |
|------------------------|----------|
|                        | 20 vs 19 |
| ECG                    | -8%      |
| VISITE                 | -30%     |
| ECO                    | -15%     |

Nota: dal 2009 a 2010 la categoria visita include CMP  
Dalla tabella sopra il trattamento è stato escluso il  
2010 di cambio a CCA  
VF include VF + VFD  
VF include VF + VFD + TNA  
BO = dati da Business Board

**AMBULATORI CMP – INTERV  
(no DH)  
2020**  
n° visite = 2338



ASUGI-TS  
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Direttore: Prof. G. Sinagra  
**CONSULENZE PER REPARTI CATTINARA – MAGGIORE - BURLO  
(eseguite da tutti AMB Cardio)  
2020**

|  | n°                                    |
|--|---------------------------------------|
| Consulenze richieste (no PS)   | 1876                                  |
| Consulenze eseguite (no PS)  | 1876                                  |
| Consulenze non eseguite perché cancellate da reparto richiedente                           | 0                                     |
| Consulenze eseguite x PS   | 1527                                  |
| Consulenze x Reparti eseguite solo da Amb Divisionale                                      | 1840                                  |
| Consulenze x Reparti eseguite da Amb SCC, Aritmie, Pacemaker                               | 36                                    |
| Intervallo (gg) tra richiesta ed esecuzione consulenza (tutti AMB Cardio, no PS) n° = 1527 | 2,9 ± 4,8 (media ± SD)<br>1 (mediana) |

## **PACEMAKER and DEFIBRILLATOR CLINIC**

**Location:** ground floor, Cardiological Hub of Cattinara Hospital, it is open from Monday to Friday from 8.30 to 13.30. (phone preferably from 12.00 to 13.00)

Monday and Friday from 8.15 to 9.15: suture removal

Monday, Wednesday, Thursday, Friday from 8.45 to 13.00: Pacemaker control

Tuesday from 8.45 to 13.00: Defibrillator check (ICD) - Resynchronization devices (CRT)

The Pacemaker Clinic is aimed at patients who have undergone pacemaker or automatic defibrillator implantation at the Cardiology Department or in other regional or extra-regional facilities. The nursing and medical professionals who work here have specialized expertise in arrhythmology and electrophysiology as well as a deep knowledge of implanted devices and programmers.

The next visit is scheduled for each checkup. The date and time of the appointment are marked on a dedicated agenda and clearly indicated in the report which is always delivered to the patient at the end of the visit.

In case of need for an unscheduled visit, the Patient can access the Outpatient Clinic by means of a written request for Pacemaker Control (code 89.48.1) from the GP (addressed to the Pacemaker Outpatient Department of the Cardiology Department, Cattinara Hospital), always after direct telephone contact. Approximately 3,500 pacemaker checks/year and about 800 checks of defibrillators and resynchronization devices are performed every year.

Since 2010, the possibility of "remotely" checking certain devices has been introduced: patients equipped with such devices are adequately informed and supplied with a transmitter which sends data via the internet to the Clinic according to scheduled deadlines or in the event of particular events (alarms or interventions by the device, patient symptoms). Every day, any "alerts" (notification of alarms) sent automatically by wireless devices are also checked (all transmissions for each patient).

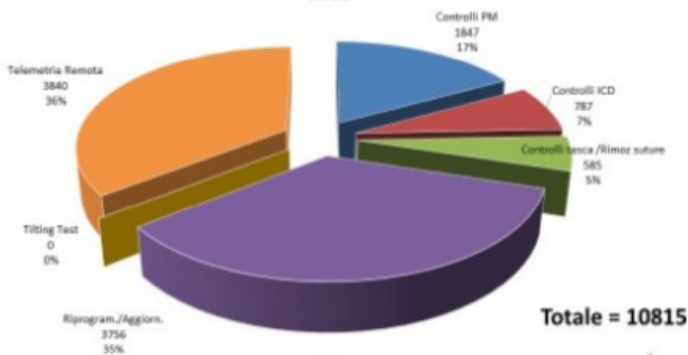
Almost all defibrillators and resynchronization devices are currently able to send data remotely.

During the hours of activity of the clinic it is possible to contact the personnel.



**ASUGI-TS**  
Dipartimento CardioToracoVascolare - S.C. Cardiologia  
Direttore: Prof. G. Sinagra

**SEZIONE DI ELETTROFISIOLOGIA ED ELETTROSTIMOLAZIONE**  
**(Resp. Dott. M. Zecchin)**  
**AMBULATORIO PACEMAKER – CONTROLLI PM/ICD**  
**2020**



## **HEART FAILURE, CARDIOMYOPATHIES, PULMONARY HYPERTENSION, COMPLEX ANGIOPLASTICS, PERCUTANEOUS AORTIC AND MITRAL PROSTHESIS (TAVI, mitral clip), CONGENITAL DEFECTS – HEART TEAM**

**Location:** ground floor, Cardiological Hub of Cattinara Hospital - open from Monday to Friday (from 8.30 to 15.00); the activity is distributed within the working day for cardiopaths with cardiomyopathies, heart failure and/or ventricular dysfunction, with the aim of scheduling a second appointment. A telephone answering system is always active.

The clinical and scientific research activity of the Cardiomyopathies and Heart Failure Clinic began in 1978. In 2015, over 1,900 patients with cardiomyopathies were classified and followed up, including dilated, hypertrophic, restrictive-infiltrative, arrhythmogenic right ventricular cardiomyopathy, ventricular non-compaction and myocarditis.

It was therefore possible to fully understand the characteristics of these heart diseases and to be a nationally and internationally avant-garde reference center in terms of pharmacological therapies, genetic characterization, therapy using various types of medical devices and invasive cardiology.

The Heart Failure and Cardiomyopathies Outpatient Clinic is aimed at cardiopathic patients with cardiomyopathies, heart failure and/or ventricular dysfunction, with the aim of planning a correct and rigorous



diagnostic procedure, providing indications and carrying out genetic screening, optimizing pharmacological therapy and providing indications for interventional or surgical procedures, including mechanical aids and heart transplantation. The Outpatient Clinic is not an "Emergency Room" facility, but is organized to carry out personalized clinical checks on the patient's clinical needs and provides rapid responses in the event of clinical instabilization or a complicated course.

Clinical and/or instrumental checks are performed on Patients discharged from the Cardiology Department, from other Departments of the Hospital that need checks, on selected External Patients (generally on previous contact by the referring Cardiologists), hospitalized in accredited Regional or Extra-Regional Hospital Facilities and on Patients from the Emergency Room. More than 2,500 patients are evaluated every year, 50% of whom are non-residents.

The connection to the IRCCS Burlo Garofolo, to the International Center for Genetic Engineering and Biotechnology and to the University of Denver in Colorado, constitute the support to the activity of Clinical and Molecular Genetics of Cardiomyopathies.

Due to the High Specialty characteristics of this function, admission to the Heart Failure and Cardiomyopathies Clinic is selected and is previously discussed by the Referring Physician with the responsible Physicians or in any case evaluated on the basis of a report sent by the GP.

The outpatient clinic for valvular defects or congenital heart disease treated percutaneously is aimed at patients affected by valvular disease such as aortic stenosis or mitral insufficiency, or carriers of

congenital heart disease, such as foramen ovale or heart disease with shunts, who have been corrected or are candidates for minimally invasive hemodynamic procedures (percutaneous aortic valve prosthesis implants (TAVI), mitral clip implants and percutaneous closure of congenital defects).

The Pulmonary Hypertension Outpatient Clinic is aimed at heart patients suffering from pulmonary hypertension who require a complete diagnostic overview or specific therapies for which the Facility is a prescribing center.



## **ARRHYTHMIA CLINIC**

**Location:** ground floor, Cardiological Hub of the Cattinara Hospital, open from Monday to Friday (8.30-12.30). The activity is distributed throughout the working day according to appointments

The Arrhythmia Clinic is dedicated to the evaluation and invasive treatment of arrhythmias, whether they are hypokinetic (brady-

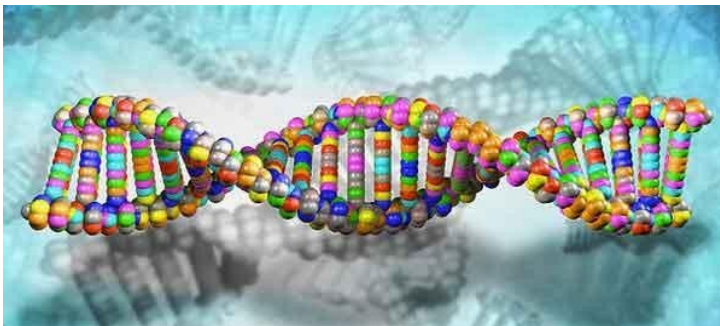
arrhythmias) or hyperkinetic (tachyarrhythmias).

It is aimed at Patients with particularly complex arrhythmological problems or potentially susceptible to non-pharmacological therapy (in particular with potential indications for electrophysiological study and transcatheter ablation or implantation of advanced resynchronization and defibrillation devices).

The clinic also monitors patients who have recently undergone invasive catheter ablation procedures.

Clinical and/or instrumental checks are performed on Patients discharged from the Cardiology Department or from other Facilities of the Giuliano Isontina University Health Authority who require a dedicated arrhythmological examination, on selected external Patients, hospitalized in private hospital facilities in Trieste or other regional Hospital facilities, on external Patients sent by external Cardiologists, Internists, General Practitioners of Trieste or the Region, and on Patients from the Emergency Room.

Due to the specific characteristics of this facility, access to the Arrhythmia Clinic is selected and is previously discussed by the referring doctor with the responsible doctors or in any case evaluated on the basis of a report sent by the GP. More than 1,000 patients a year are visited at the clinic, about 80 patients a month. The visiting hours are set quarterly by the Doctors involved in this activity.



## **CENTER FOR CLINICAL AND EXPERIMENTAL CARDIOLOGY (CENTER FOR TRANSLATIONAL CARDIOLOGY, CTC)**

The Center for Translational Cardiology (CTC) is realized in collaboration between the cardiologists of the Giuliano Isontina University Health Authority - Cattinara Hospital and the researchers of the Molecular Cardiology team of the International Center for Genetic Engineering and Biotechnology (ICGEB). This facility was created in 2010 with the aim of closely integrating research with the clinic activity.

### **Structure of the Molecular Cardiology Laboratory**

It consists of 2 separate contiguous areas:

- Biology and Molecular Genetics Area
- Cell Culture Area

### **Functions and Objectives**

On the clinical side, the most ambitious goal of the CTC is to facilitate the transition to the clinic of the results of experimental research on patients with their problems of ischemia and ventricular dysfunction.

Cardiac regeneration (of contractile cells and supporting blood vessels) is currently the subject of considerable cardiological study and research. From the screening of all known secretome factors and microRNAs, molecules emerged with an important proliferative power on cardiomyocytes in vitro and in vivo, the study of which will involve

the CTC in the coming years. A second objective of the CTC is to characterize the primary cardiomyopathies from a genetic point of view. Finally, the CTC intends to contribute to the training of new professional figures, training doctors who know how to combine clinical cardiology with advanced laboratory research.

## **COMPUTERIZATION**

Highly computerized systems are active, systems for archiving, transmission and reporting of ECG tracings and bio-images acquired with different methods of diagnostic images in digital format. This network (PACS) allows an image acquisition, display and printing subsystem, an image management and archiving subsystem and finally a network communication subsystem. Network communication makes it possible to connect the components of the system, to integrate the PACS system with the healthcare information systems and to disseminate the data so as to make it possible for staff to use it (access is only permitted with a personal password) in order to be able to consult the patient's medical records also in other healthcare facilities.

## HOSPITALIZATION IN THE CARDIOLOGY DEPARTMENT

Hospitalization takes place in the following ways:

- **Scheduled ORDINARY hospitalization** is foreseen for users already notified to our Department, the date of hospitalization has been established to carry out invasive investigations and diagnostic investigations
- **URGENT hospitalization** through access to the Emergency Room and urgent notifications from other Departments (other Departments of the Local Health Authority, Cardiovascular Center, Functional Area, Cardiology Outpatient Clinics, other hospitals in the region) or from other Regions
- **DAY-HOSPITAL** is foreseen for some interventions and procedures that do not require hospitalization (e.g. electrophysiological study, right catheterization, replacement of the pacemaker or defibrillator generator, electrical cardioversion in complex patients, etc.)
- **The preferential hospitalization from the EMERGENCY ROOM is always guaranteed.**
- **PROGRAMMED ELECTRIC CARDIOVERSIONS:**  
They are performed on an outpatient basis, but require a bed for a few hours.

### HOSPITALIZATION DURING THE COVID-19 PANDEMIC

During this period, all patients with an indication for hospitalization at the Cardiology Department need COVID-19 negative test performed maximum 24-72 hours before admission. In case of positivity to COVID-19 and hospitalization that cannot be postponed according to medical judgment, the patient will access the Cardiology Department according to dedicated pathways and will be managed in the dedicated COVID-19 rooms, according to specific protocols agreed with the Medical Directorate and periodically updated in the light of new scientific evidence.



## **INFORMED CONSENT**

The user has the right to be fully informed on the progress of the diagnostic-therapeutic plans and to express or deny his/her consent to the proposed therapies or procedures.

During the stay in the hospital, a general consent and a specific one will be requested for procedures of an invasive and/or more complex nature, as required by current legislation.

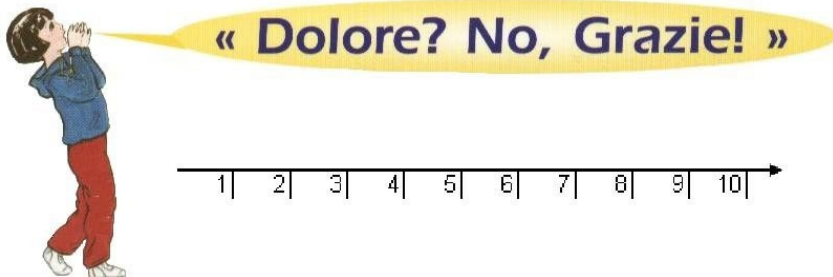
The procedures that require informed consent are the following:

- Health, diagnostic, therapeutic and surgical treatment
- Clinical trials
- Processing of personal data.

Consent involves several phases, takes advantage of periodically updated information material and can be withdrawn at any time.

## PAIN MANAGEMENT

As part of the personalization and humanization of care throughout the hospital stay, the pain scale is constantly re-evaluated by both doctors and nursing staff. We use a mixed analogue scale that is easily understood by the patient ranging from 0 (absence of pain) to 10 intolerable pain.



*["Pain? No, thank you!"]*

## PARTICIPATION IN THE CARE

A strong therapeutic alliance and the establishment of a relationship of trust are the necessary basis for an effective health intervention. We are very keen on combining professionalism, technical expertise and technological advancement of diagnostic-therapeutic practices with constant information, listening and human attention to the patient and his/her family.

The user has the right to participate in the elaboration of the treatment plan, to be informed on how the disease may affect the quality of his life and on the therapeutic and assistance remedies to eliminate or reduce the states of suffering and pain. Each user is allowed to interrupt treatment at any stage of the clinical-assistance process or to



refuse a given treatment. Healthcare professionals have an obligation to inform the patient about the possible consequences of this behavior.

Information on the state of health of the patients is provided by the responsible physician and the doctors. For obvious reasons of confidentiality, all clinical information is referred only to direct family members or other people, if expressly delegated by the patient with a specific signed consent form. Relatives can view the medical record together with the doctor. In order to ensure continuity of information, it is desirable that the same person maintain relations with the doctor. Family members are constantly involved in the patient care program. At the time of discharge from hospital (in particular situations during hospitalization) the General Practitioner and the referring specialist will be informed by means of an accurate discharge letter on the reasons for hospitalization, clinical status, course, educational aspects and program for the patient.

**NO!**



**N.B.: FOR PRIVACY PROTECTION REASONS, TELEPHONE INFORMATION ON THE CLINICAL CONDITIONS OF THE PATIENT IS NOT PROVIDED. PLEASE DO NOT REQUEST ANY INFORMATION BY TELEPHONE**

**Only during COVID-19 pandemic period, telephone information will be allowed, with the express consent of the patient and only to the persons indicated by the patient.**

## **RELIGION**

All hospitalized patients are guaranteed respect for their faith. It is possible to receive ministers and representatives of one's religion. The presence of a Catholic priest who periodically visits the ward is guaranteed.

## **USER INFORMATION METHODS**

The user will receive clarifications and explanations regarding the therapeutic program and the planned instrumental tests directly from the medical and nursing staff through verbal information, written information notes, informed consents.

If the user is a foreigner, the cultural mediator will be involved in order to understand the exams, the therapeutic program and interact with the doctor in the treatment programme. Any relatives, acquaintances and healthcare professionals who are able to express themselves correctly in Italian and in the patient's mother tongue can act as mediators if available and if authorized by the patient.

## **CULTURAL MEDIATION**



The cultural mediator is a professional who uses the foreign user's native language and helps him/her to understand what is requested, prescribed or proposed by the doctor, health professionals and hospital professionals.

The cultural mediator intervenes in order to allow the foreign user to correctly understand:

- the health problem
- the urgent needs
- how clinical tests and diagnostic procedures are performed and their objectives and the consequent consents
- the diagnosis
- the therapeutic indications to be followed on discharge from hospital

## **VISITS OF RELATIVES**

Receiving visitors is desirable, with a minimum of two visitors per room. Patients hospitalized in the Cardiology Department who are able to get up can receive friends and family in the living rooms.

Taking small children to the hospital is inadvisable, in order to protect their health; if it is unavoidable, it is preferable to stay in the living room area.

In the event of particular seriousness or for specific reasons, family members will be allowed to stay with their relative at different times, with limitations dictated by the specific situations that may arise and in agreement with the medical and nursing staff. Always provide the Nursing Staff with all your telephone numbers useful for contact even in emergency conditions.

In the event of a transfer or sudden changes in health, family members will be notified by telephone, at any time, by the nursing or medical staff on duty.

For family members: if your relative's valuables are delivered to you, carefully check everything, before signing for receipt.

Both in intensive care and in hospitalization, in order to reduce the risk of infection, it is not advisable for more than two visitors to be present at a time and they will be careful to disinfect their hands before and after the visit with the gel product placed at the entrance of the Cardiological Intensive Care Unit and outside each hospital room.

Visitors are invited not to touch the furnishings inside the boxes of the Cardiological Intensive Care Unit.

Always declare the possible presence of hearing aids or mobile or other types of dental prostheses. Together with your family members, be active in preventing its loss.

## **PATIENT SAFETY**

Within the Cardiology Department, patient protection measures are implemented and provide for the correct identification of the patient (identification bracelet) and optimal management of the medicines.

In addition, measures are implemented in order to:

- reduce the risk of healthcare associated infections;
- reduce the risk of harm to the patient following a fall;
- prevent medical errors and analyze sentinel events;
- communicate effectively with patients and family members;
- reduce delays in various patient care processes.

The environments are constantly evaluated, the electromedical devices are subject to periodic checks, safety checks and maintenance.

## **MOBILE PHONES**

The use of mobile phones is permitted in respect of the privacy and peace of the other patients, without forgetting to always turn off the ringtone.

## NUTRITION

There is the possibility of choosing the dishes daily based on the clinical condition of the patient, the diet and the execution of certain procedures. For this reason, the offer must often be limited to suitable foods and adjusted daily.

## MEAL DISTRIBUTION TIMES

**Breakfast: 8.30 - Lunch: 12.00 - Dinner: 18.00**

In the event that the patient wants some food from home, s/he must first consult the doctor or nursing staff. Some pathologies do not allow a free diet. By providing food, without our knowledge, you could cause damage to your relative.



## CORRECT DIET and CARDIOVASCULAR DISEASES

Dietary advice from the Cardiology  
Department and Dietetic Service.

**Nutrition must consider the risk factors of heart disease.** In

general it is recommended to:

- maintain a desirable weight (avoid being overweight)
- perform physical activity (aerobic, of agreed intensity, daily)
- reduce foods that contain saturated fat, total fat and cholesterol (butter, red meat and fatty fish, etc.);
- as the main condiment, use raw extra virgin olive oil at the end of cooking

- control simple sugars (sweets, ice cream, chocolate but also excess fruit and dairy products), salt, alcoholic beverages, caffeine
- have a diet as varied as possible, eat seasonal fruit and vegetables

Every activity performed by the organism constitutes work for the heart. Digestion is also work. Correct nutritional treatment can decrease its commitment. Therefore it is recommended to:

- divide up foods throughout the day (e.g. 5 meals) and avoid large meals
- chew carefully and slowly to facilitate digestion, prefer foods packaged in a simple way, avoid elaborate dishes, fried food and sauces are contraindicated.
- aromatic herbs (rosemary, sage, basil, oregano, parsley, garlic), lemon, vinegar, natural tomato sauce can be used to flavor foods
- freely consume drinks such as: natural water, chamomile, barley, natural herbal teas, light tea.
- prefer foods of **plant origin** (bread, pasta, fruit, vegetables, oils, legumes are cholesterol-free and very low in saturated fat).
- Limit **meat** to no more than 3-4 times out of 14 weekly meals giving preference to poultry, rabbit, turkey, lean cuts of beef and horse.
- Then use the **fish** 6-8 times out of 14 weekly meals. Fish (sole, trout, turbot, skate, monkfish, cod, oily fish) is a food to

be preferred among products of animal origin due to its content in polyunsaturated fatty acids essential for the body.

Crustaceans, eel and salmon are contraindicated.

- Limit **cheese** to no more than 1-2 times a week, giving preference to **fresh cheeses** such as ricotta and mozzarella. There are no "lean" cheeses, but only cheeses with a reduced amount of fat compared to the others. **Milk** or **yoghurt**, preferably low-fat, is recommended once a day for calcium intake.
- **Legumes** (beans, peas, soybeans, chickpeas, lentils, etc...) are also a protein source and are free of saturated fat and cholesterol, they can replace a second course.
- **Cured meats** are not recommended due to their salt, saturated fat and cholesterol content. Fat-free raw/cooked ham and bresaola are allowed only occasionally.
- **Eggs** should be limited and **offal** (brain, liver, kidney) should be avoided because they are particularly rich in cholesterol.
- If you are not overweight, **bread, pasta and rice** (even wholemeal) can be used quite freely, carefully controlling the condiments and always maintaining the desired weight.
- **Vegetables** (fresh or frozen) guarantee an important supply of fibers and have a remarkable satiating power, therefore they should be consumed regularly at least 2 times a day.
- **Fruit** can be a mid-morning and mid-afternoon snack. 2-3 medium seasonal fruits per day are recommended, avoiding dried and oily fruit.

Upon discharge from hospital, dietary advice will be given based on the pathology and the various risk factors (for example low-sodium diets in case of hypertension; in case of heart failure, pay attention to liquids; in case of hypercholesterolemia, pay attention to fatty foods rich in cholesterol, etc...)

## MEDICINES

It should be noted that every medicine, even the most banal one, contains chemicals that interact with each other. These substances could increase, decrease or even cancel the effect of the medicines prescribed by the doctor. Therefore patients are advised not to take or keep personal medications. Where it becomes necessary to continue a particular treatment, the doctor must be informed for the validation of the therapy and the subsequent order at the Hospital Pharmacy.



## MONEY AND VALUEABLES

Although continuous surveillance is in place, it is not recommended to leave money or valuables unattended.

It is advisable **not** to bring large sums of money and/or valuables during your stay in hospital.

## RULES OF CONDUCT

If you are hospitalized in the Cardiology Department, for your safety, you must not leave the department, unless expressly authorized by the staff. Exit permits can be authorized by the doctor on duty in



special cases and of extreme necessity.

If you decide to leave the hospital against the advice of the doctors, you will be required to sign a liability release. For any doubts, the staff is at your disposal.

## **CERTIFICATE OF HOSPITALIZATION**

At the time of admission, the patient who requires a certificate due to INPS obligations must communicate it directly to the first operator met by the patient. The operator will deliver the certificate digitally to INPS. In the same way, at the time of discharge from hospital, the certificate of illness will be written by the doctor who writes the discharge letter together with any exemptions and treatment plans.

The hospitalization certificate for different uses (study-insurance, etc.) is issued by the Administrative Acceptance Office located on the 3<sup>rd</sup> floor near the Emergency Room, from Monday to Friday from 7.15 to 15.30.

## **PROCEDURE FOR SUBMITTING COMPLAINTS**

**Complaints are submitted to the Public Relations Office (opening hours from Monday to Friday from 8.30 to 13.00) in the following ways:**

- direct interview
- telephone interview (Ph. 040 3994880)
- letter, fax (040.399 4617) or e-mail ([urp@asugi.sanita.fvg.it](mailto:urp@asugi.sanita.fvg.it))
- specific form available in the Information Points and in the complaint boxes located in the two hospitals

## **UPON DISCHARGE FROM HOSPITAL**

The patient will be given a detailed discharge letter indicating the diagnosis and containing the reports of the diagnostic tests performed during hospitalization, the latest blood tests, a copy of the electrocardiographic tracing, any interventions, the therapy to be taken at home, the behavioral, dietary and convalescence indications and check-ups after discharge from hospital, any appointments already fixed at our clinics on the ground floor or at the Cardiovascular Center of the Maggiore Hospital. A series of information booklets relating to the type of the heart disease.

The patient with a pacemaker will be given a card with indications relating to the type of pacemaker and subsequent checks.

Patients undergoing coronary angiography and angioplasty will be given a CD with a copy of the examination performed, to be kept and shown at any subsequent hospitalizations.

Patients on anticoagulant therapy will be provided with specific useful information on the therapy.

During hospitalization, the smoking status of patients is detected and an information process is started, also with the help of brochures, at the time of discharge from hospital. Smoker patients who are interested are sent to local centers (Trieste Anti-Tobacco Center telephone: 040 –3997373) or to the Cardiovascular Center of the Maggiore Hospital to continue the educational process on smoking cessation on an ongoing basis.



The patient will receive a letter, addressed to the General Practitioner, including the diagnosis, treatment advice, reports of the main tests performed and the post-discharge programme.

We invite you to deliver the discharge report to your General Practitioner and Cardiologist as soon as possible.

In order to continuously improve the quality of the services, we would be grateful if you would report any discomfort or inconvenience to the Doctors or Nursing Coordinators. We will finally be grateful for any suggestion.

If the patient requires a period of continuation of treatment before returning home, the Continuity of Care procedure will be activated, or the Home Nursing Service of the District to which they belong will be contacted, in order to implement a supportive social assistance network, which can help the patient, but also his/her family members, in order to face their health journey in the most effective way possible.



**After discharge from hospital,  
IN CASE OF ACUTE SITUATIONS (prolonged chest pain, sudden dyspnoea, sudden and prolonged palpitations)**

**THE FIRST REFERENCE WILL BE THE EMERGENCY ROOM where the Consultant Cardiologist will be called.**

## **HOW TO REQUEST THE MEDICAL RECORD**

The copy of the clinical documentation can be requested by the patient or by another person with a proxy and with the delegating and delegate valid identity document. If the patient is a minor, the self-certification of exercise of parental or legal authority must be attached to the request. If the medical record of a deceased person is requested, the self-certification attesting the status of legitimate heir of the deceased person must be attached to the request.

The application must be submitted:

- at the CUP counters of both the Cattinara Hospital and the Maggiore Hospital

**Where to collect** - The medical record can be collected at the CUP counters or the medical record can be received at home, paying the

postage.

**How to collect** - The medical record can be collected in person or by proxy, in this case it is necessary to have a photocopy of the identity document of the delegating person.

At the time of requesting a copy of the medical record at the CUP, the user will have to pay a fixed fee in advance, while at the time of collection of the documentation, s/he will pay a variable fee, in relation to the number of photocopied pages.

For patients who are not resident in the municipality of Trieste, it is possible to send the request for a copy of the medical record by fax using the form (to be requested from the secretariat), which will be sent to your home address (cash payment on delivery)

## CONTINUITY OF CARE



The continuity of care between the hospital and the territory has the aim of ensuring a protected discharge from hospital through the taking in charge of the patient by the District Services in collaboration with the general practitioners, in a network with the Social and Health Services and the Volunteer Associations.

The system provides for the connection between the Departments and the Home Nursing Service of the Districts in order to:

increase the number of assisted patients in protected discharge from hospital especially if elderly, heart patients, bronchopaths, phlebopaths and diabetics with a history of repeated hospitalizations in order to guarantee effective and timely assistance.

During hospitalization, the most appropriate care pathway and the treatment program after hospitalization are agreed with the Patient and with the Family members, in some cases patients are referred to the Cardiovascular Center, to the referring Cardiologist, in selected and complex cases to the facility Pineta del Carso and to Healthcare Residences (RSA) to continue a rehabilitation process in protected facilities.

## **ORGANISATION, COMMUNICATION, TRAINING AND QUALITY EVALUATION**



The activity of the Cardiology Department is divided into structured moments of meeting, communication, analysis of activities and organization, sharing of clinical management and updating:

- every morning from Monday to Saturday at 8.00, clinical handovers, critical review of problems, management sharing and activity planning
- every day, from Monday to Friday at 14.00, discussion of cases undergoing invasive cardiology procedures
- every Wednesday morning at 8.00, clinical update/AUDIT meeting (30 minutes)
- every Thursday afternoon at 15.00, discussion of cardiac surgery cases and HEART TEAM
- every Friday at 8.00, meeting of clinical echocardiography
- one Friday a month, complex case study discussion at Heart Failure-Cardiomyopathies Clinic/Molecular Cardiology Meeting with ICGEB.



## **TEACHING AND SCIENTIFIC RESEARCH ACTIVITIES**

Knowledge transfer and research in the clinical field have always had an important place in the activity of the Hospital University Department of Cardiology, mainly addressing the nosological, epidemiological, etiopathogenetic aspects and the natural history of patients with Heart Failure and Cardiomyopathies. Since the end of the 80s, research activity in this field has been organized with the establishment of the "Heart Failure and Cardiomyopathies Study Group" which has the value of a National Reference Center which collects its data as part of a structured Register activity.

The structured research activity mainly concerns the following topics:

- Genetically determined dilated, hypertrophic and arrhythmogenic right ventricular cardiomyopathy
- Heart Failure and Myocardial Diseases
- Heart failure therapy
- Atrial fibrillation
- Prognostic stratification of arrhythmic risk
- Pulmonary arterial hypertension
- Epidemiological studies of anatomical-clinical correlation
- Histo-morphological and immunohistochemical study of endomyocardial biopsy
- Molecular Cardiology, Cell Therapy and Neoangiogenesis.

Over the years there have been numerous Registry activities and international randomized, controlled, multi-center Clinical Trials in the



sectors of Ischemic Heart Disease, Interventional Cardiology, Acute and Chronic Heart Failure, Arrhythmias, Cardiovascular Prevention and Rehabilitation.

The patient is always given informed consent for the processing of personal data and the inclusion of clinical data in observational registers or for enrollment in clinical trials.

The medical staff carries out didactic and tutorial activities for the students of the University Degree Course in Medicine and Surgery and for various Specialization Schools.

There is constant collaboration resulting from years of intense research activity with the Colorado Clinical & Translational Sciences Institute (University of Colorado, Denver, USA), the Medical Genetics and Virology Service of the Burlo Garofolo Children's Hospital in Trieste, the International Center for Genetic Engineering and Biotechnology (ICGEB, International Center for Genetic Research and Biotechnology, located in Padriciano, Trieste), the Institute of Pathological Anatomy of the University of Trieste and with various other international institutions.

The Center is widely recognized in the scientific field for the quality of its activity and this has translated over the years into an ever-growing transversal collaboration with national and international organizations in the form of:

- Participation in international trials
- Contribution to the creation of national and international databases
- Collaborations with the main international institutions in the field of

clinical and experimental research projects.

## **CLINICAL-GENETIC FRAMEWORK OF CARDIOMYOPATHIES**

The clinical framework, management and follow-up of patients with cardiomyopathies observed at the Cardiology Department of the Giuliano Isontina University Health Authority has been performed systematically for over 30 years. The clinical and instrumental data collected on patients progressively followed up constantly feed the Registry of the Heart Muscle Diseases of Trieste which currently has over 1,900 enrolled patients.

In recent years, the development of molecular biology techniques has allowed us to explore the fundamental role of genetic factors in heart muscle diseases. Studying their natural history and heredity is essential for early identification and more effective treatment of those affected by these diseases. Understanding their hereditary basis could lead to progress in understanding the mechanisms of these diseases, early diagnosis and improved treatment and prevention.

A registry has been active in Trieste since 1978 and collects the data of all patients with cardiomyopathy followed in the outpatient clinics and it has become a national reference center. Currently the Registry is accessible via the web, protected by personal passwords. It is based on Microsoft SQL Server and the web pages are developed in ASP (Active Server Page). It currently collects more than 2,500 patients belonging to the various phenotypes of cardiomyopathy (Dilated, Arrhythmogenic, Hypertrophic, Biologically proven myocarditis, Amyloidotic - See table). Prior to informed consent,

clinical, instrumental and therapy data for each patient are collected, at baseline and at each re-evaluation during the follow-up. When indicated, the results of the genetic analysis are also reported. The most common events, cardiovascular and otherwise, that occur during the medical history are also recorded for each patient.

**Table: CARDIOMYOPATHY REGISTRY**

| <b>UPDATE AS OF<br/>3/31/2021</b>   | <b>CMPDILATATIVE<br/>(genetic; post-<br/>myocardial;<br/>alcoholic<br/>chemotherapy)</b> | <b>CMPIPERTROPHIC</b> | <b>CMPARITMOGENE</b> | <b>MYOCARDITIS</b> | <b>AMYLOIDOSIS</b> |
|-------------------------------------|--|-----------------------|----------------------|--------------------|--------------------|
| <b>No.</b>                          | <b>1630</b>  | <b>390</b>            | <b>147</b>           | <b>148</b>         | <b>175</b>         |
| <b>Average age (years)</b>          | <b>52±15</b>   | <b>47±19</b>          | <b>38±16</b>         | <b>40±17</b>       | <b>62±11</b>       |
| <b>Follow-up (months)</b>           | <b>119±83</b>  | <b>65±50</b>          | <b>119±115</b>       | <b>145±136</b>     | <b>96±36</b>       |
| <b>No. Follow-ups<br/>(approx.)</b> | <b>8000</b>  | <b>1000</b>           | <b>800</b>           | <b>550</b>         | <b>650</b>         |

## **ORGANIZATION OF THE DATABASE OF THE REGISTRY OF HEART MUSCLE DISEASES OF TRIESTE**

The progressive enrollment of patients is based on homogeneous and defined criteria which are rigorously evaluated by the dedicated personnel (Physicians and Residents) in order to confirm or exclude the eligibility of the case. Therefore, all patients suffering from Cardiac Muscle Disease, diagnosed according to specific criteria and who have had hospitalization or a visit at the Cardiology Department of Trieste, are included in the registry after signing an informed consent form, as well as all first-degree relatives of the patient, who are offered periodic follow-up at a pre-defined deadline even in the absence of disease, in order to identify and treat early its eventual onset.

Each patient undergoes all the instrumental investigations useful for the diagnostic, clinical and prognostic classification, at the time of the first evaluation and during the follow-ups. The data is then collected and integrated into an "on the web" computer database by a dedicated Data Manager.

Biological samples (blood) are also collected, in agreement with the patient, and stored according to appropriate methods and integrate the biological side of the Registry, with the main purpose of carrying out a series of genetic investigations aimed at identifying possible causal mutations currently known, as well as the identification of new pathogenic variants, in collaboration with accredited external genetic facilities and services.

The Registry was created and continues to grow in order to contribute to the progress of knowledge in this complex sector of cardiovascular pathology and in order to highlight prognostically heterogeneous and high-risk subgroups that need specific therapeutic strategies.

Funds for molecular genetic characterization derive from funding

obtained for scientific research from organizations, institutions and benefactors.

## PHYSICAL RESTRAINTS

With the Regional Council resolution no. 1904 of **14 October 2016**, the **Friuli Venezia Giulia Region** adopted the recommendation for overcoming the restraint in health, public and private social healthcare facilities accredited with the National Health System.

ASUGI also implements corporate policies aimed at overcoming physical restraints.

In the case of patients suffering from particular pathologies or functional conditions that cause alterations of the musculoskeletal system, motor deficits and/or postural control, such as to require specific interventions aimed at postural support as well as assistance in carrying out activities that would otherwise be impossible or at high risk of accidental falls, the professionals activate the necessary procedures for the adoption and prescription of the suitable aid.

**The use of standard or customized aids for this purpose does not constitute recourse to restraint measures.**

**Article 13 of the Italian Constitution:** *"No form of detention, inspection or personal search, nor any other restriction of personal freedom is permitted..."*

The National Bioethics Committee at the Presidency of the Council of Ministers spoke out against this *practice (Restraint: Bioethical Problems 23 April 2015)*

# PREVENTION OF FALLS

## A DECALOGUE



Wear comfortable clothing and avoid nightgowns (So you don't trip).  
Use pajamas and overalls to be used also for any motor rehabilitation.  
Footwear must be closed, comfortable, with simple lacing and with a non-slip sole.



Bring from home any aids (cane, walker, tripod) that you use every day for walking. Remember also glasses and/or hearing aids, if you use them.



If you have not received precise information in this regard, ask the Medical or Nursing Staff if there are contraindications to get up independently from the bed and/or from the chair, on the basis of your pathology and therapy.



If the Medical and/or Nursing Staff has advised you against getting out of bed and/or from the chair independently or if you feel unable to do so on your own (dizziness, feeling unwell, movement difficulties, .....), always call the Assistance Staff using the call bell.



Before getting out of bed, even if you have been instructed to get up freely, sit down and wait a few minutes, avoiding brusque and sudden movements. When stooping or stretching, always hold on to a firm support and avoid turning too fast.



If you have to go to the toilet frequently, keep the position of the bed down and the area adjacent to the bed tidy.



When you have to change position in the shower/bathroom, hold on to the special handles.



Avoid walking on wet surfaces (be careful when cleaning is in progress).



Promptly inform the Assistance Personnel of any lighting defects in the rooms, failures of the bed positioning control and malfunctions of the call bell.



Warn the Assistance Personnel whenever you leave the ward.



If you are a male, please sit on the toilet when you have to urinate, your head could spin.



We recommend you to:

- Always wear closed shoes or slippers with non-slip soles and low heels;
- Ensure that the nurse call bell is within reach when in bed or when seated in an armchair or chair;
- Make sure that the things you need (water, glasses, etc.) are within easy reach. If not, please call for assistance;
- If you need to go to the bathroom, get up or go back to bed, please call for assistance;
- When you are in the bathroom, move very carefully and use the handles available to support yourself. Also locate the button for a possible request for assistance;
- While waiting for assistance it is important that you remain calm in bed or sitting up. A member of staff will arrive as soon as possible. With your permission, bands can be applied to the sides of the bed to reduce the risk of accidental falls;
- Ask the staff for help putting back your glasses or any device (hearing, dentures, etc., etc.) before getting up;
- In the event of a fall, try to remain calm, call for help and if you can reach an alarm button, activate it. Don't try to stand up on your own as this maneuver can make the situation worse; instead, remain where you are and wait for the arrival of the nursing staff.

## **NOTE**

*This brochure is accurate at the time of printing and is updated periodically. However, changes in operations could occur between one edition and the next.*



Drafted by ASUGI's Communication, External Relations, Press Office, URP on the basis of text and images provided by the Cardiology Department

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