



PROGETTO  
MATTONE INTERNAZIONALE

WORKSHOP

**SALUTE DEL MEDITERRANEO**

*I progetti di partenariato internazionale*

*del Ministero della salute:*

*esperienze a confronto*

ROMA, 20 Maggio 2014

Hotel dei Congressi

Viale Shakespeare, 29

**11.00** Presentazione dei progetti EUROMED finanziati per l'anno 2013:

Progetto 1: "Interventi in materia di salute materno-infantile".

G. MAGAZZU', *Università degli Studi di Messina, Facoltà di Medicina e Chirurgia.*



# OUTLINE

- What is MEDICEL
- Project status
- Future perspectives

# MEDICEL The Mediterranean Network for Celiac Disease

Coordinator Luigi Greco ELFID – Federico II University - Naples



**Direction of International Affairs, Italian  
Ministry of Health**

# **WHAT IS MEDICEL?**

**The Mediterranean Network dedicated to Food Induced Disease in Children.**

**This is an emerging public health issue concerning at least 5 millions individuals in the Mediterranean Area**

**These diseases produce malnutrition, growth failure and severe morbidity in the area**

In the first two years we focused on  
gluten induced disease



## CELIAC DISEASE

which is by far the most frequent of these  
diseases : more than one individual over 100 is  
affected, but the large majority (90-95%) are  
not recognized neither cared for

# OBJECTIVES



- 1. Capacity building and development of guidelines for the care of food induced disease in infants and children**
- 2. Establishment of a Mediterranean network to share know how and technology for the diagnosis and management of food induced disease in children, with special attention to the pandemic of gluten intolerance**

# OBJECTIVES

- 3.** Development of local sustainable strategies to diagnose and support the dietary care of children affected by food induced diseases
- 4.** Identification of genetic and environmental risk factors for food induced intolerance in children
- 5.** Development of preventive measures to reduce the burden of food induced diseases in children

# Objectives centered May 2013

- **Estimate of the Burden of CD in the Mediterranean area in the next 10 years**
  - 5 Millions cases expected
  - Excess mortality of 2700.000 predicted
  - Excess cost for missed diagnosis estimated > € 4 billion



*World Journal of  
Gastroenterology*

Online Submissions: <http://www.wjgnet.com/1007-9327office>  
wjg@wjgnet.com  
doi:10.3748/wjg.v17.i45.4971

*World J Gastroenterol* 2011 December 7; 17(45): 4971-4978  
ISSN 1007-9327 (print) ISSN 2219-2840 (online)  
© 2011 Baishideng. All rights reserved.

*BRIEF ARTICLE*

## **Burden of celiac disease in the Mediterranean area**

Luigi Greco, Laura Timpone, Abdelhak Abkari, Mona Abu-Zekry, Thomas Attard, Faouzi Bouguerrà, Paskal Cullufi, Aydan Kansu, Dusanka Micetic-Turk, Zrinjka Mišak, Eleftheria Roma, Raanan Shamir, Selma Terzic

# Objectives centered January 2014

Tucci et al. *BMC Gastroenterology* 2014, **14**:24  
<http://www.biomedcentral.com/1471-230X/14/24>



RESEARCH ARTICLE

Open Access

## Celiac disease in the Mediterranean area

Francesca Tucci<sup>1</sup>, Luca Astarita<sup>1</sup>, Abdelhak Abkari<sup>2</sup>, Mona Abu-Zekry<sup>3</sup>, Thomas Attard<sup>4</sup>, Mongi Ben Hariz<sup>5</sup>, José Ramon Bilbao<sup>6,21</sup>, Ghazalia Boudraa<sup>7</sup>, Samir Boukthir<sup>8</sup>, Stefano Costa<sup>9</sup>, Veselinka Djuricic<sup>10</sup>, Jean-Pierre Hugot<sup>11</sup>, Iñaki Irastorza<sup>12,21</sup>, Aydan Kansu<sup>13</sup>, Sanja Kolaček<sup>14</sup>, Giuseppe Magazzù<sup>9</sup>, Dušanka Mičetić-Turk<sup>15</sup>, Zrinjka Misak<sup>14</sup>, Eleftheria Roma<sup>16</sup>, Pasqualino Rossi<sup>17</sup>, Selma Terzic<sup>18</sup>, Virtut Velmishi<sup>19</sup>, Carmela Arcidiaco<sup>1</sup>, Renata Auricchio<sup>1†</sup> and Luigi Greco<sup>1,20\*†</sup>

This cross-sectional study of CD in the Mediterranean referral centers offers a puzzling pictures of the capacities to deal with the emerging epidemics of CD in the area, giving a substantive support to the World Gastroenterology Organization guidelines

# WHERE ARE AVAILABLE DIAGNOSTIC RESOURCES ?























COUNTRY	WHERE TGASI	WHERE BIOPSY
<i>ALBANIA</i>	Hospital+private	Hospital+private
<i>ALGERIA</i>	NA	NA
<i>BOSNIA</i>	NA	3 centres
<i>CROATIA</i>	6 centres	7 centres
<i>EGYPT</i>	7 labs	7 centres
<i>GREECE</i>	Hospital+private	Hospital+private
<i>ISRAEL</i>	Very diffuse	10 centres
<i>MALTA</i>	Hospital+private	3 centres
<i>MAROCCO</i>	Private	4 hospital+private
<i>SLOVENIA</i>	Hospital+private	2 centres
<i>TUNISIA</i>	7 centres	7 centres
<i>TURKEY</i>	Many centres	30 centres



## ... A ROUGH ESTIMATION OF COST

<b>COUNTRY</b>	<b>TGasi</b>	<b>Biopsy</b>	<b>Pathology</b>	<b>Kg of G.F. Food</b>
<b>ALBANIA</b>	35 €	80 €	50 €	5€
<b>ALGERIA</b>	60 €	25-30€	15 €	3 €
<b>BOSNIA</b>	112 €	25 €	30 €	5,50 €
<b>CROATIA</b>	NA	NA	NA	5 €
<b>EGYPT</b>	50 €	70 €	30 €	NA
<b>GREECE</b>	18-36 €	88-800 €	30-400 €	9-14 €
<b>ISRAEL</b>	20 €	200 €	50 €	NA
<b>MALTA</b>	60-80 €	600-1000 €	200 €	NA
<b>MAROCCO</b>	40 €	60 €	30 €	NA
<b>SLOVENIA</b>	NA	NA	NA	NA
<b>TUNISIA</b>	30 €	18€ (bio+path)	18€(bio+path)	5-6 €
<b>TURKEY</b>	7,20 €	36,70 €	16,30 €	10 €

## HOW IT IS MANAGED THE GLUTEN-FREE DIET ?

 COUNTRY	KIND OF DIET	SUPPORT TO DIET	
 <i>ALBANIA</i>	Naturally G.F. foods	60 € monthly	
 <i>ALGERIA</i>	Case by case	None	
<i>BOSNIA</i>	Naturally+manufactured	G.F. flour	
 <i>CROATIA</i>	Naturally+manufactured	10 kg G.F. flour monthly	
<i>EGYPT</i>	Naturally	None	
 <i>GREECE</i>	Naturally+manufactured	G.F. products by NHS	
<i>ISRAEL</i>	Case by case	G.F. products by NHS	
<i>MALTA</i>	Case by case	G.F. products by NHS	
 <i>MAROCCO</i>	Naturally	None	
<i>SLOVENIA</i>	Naturally+manufactured	Financial support	
 <i>TUNISIA</i>	Naturally+casebycase	None	
<i>TURKEY</i>	Naturally+manufactured	yes	

# Objectives to center June-December 2014

- To make affordable the diagnostic work-up of CD
- To make affordable a gluten free diet

# Peer support for diagnostic issues

- MEDICEL is working on :
  - An on-line consultation for tricky cases
  - A quality control of serology tests through blind samples
  - A support to do HLA typing at reduced cost
  - An on line consultation on histological images
  - An on-line revision of the diagnosis

# Objectives to center June-December 2014

-To make affordable the diagnostic work-up of CD through collaborative studies

- \* Case finding or screening?

- \* To disseminate a cheap and rapid Point-of-Care Test

- \* To simplify the diagnostic work-up applying if any new ESPGHAN guidelines

# Case finding vs screening in sequence to bridge the diagnostic gap of CD in Sicily

**Background:** more than 2/3 of CD patients are not recognized yet with possible severe consequences in terms of morbidity, mortality and costs

## **Aims:**

- Primary: to assess the yield of two strategies for diagnosing CD in Sicily

- Secondary:

  - to assess the **PPV of the PoCT**

  - to assess the compliance to GFD and quality of life between patients diagnosed by case finding or by screening

## DESIGN AND SETTING:

**Design:** two phase prospective study

**Settings:** Family Pediatrician Office (FPO) Referral center for CD

		By total	By CF	By SC
Known Celiac	<b>103</b>	(1:303)	(1:236)	
Celiac after CF	<b>118</b>	(1:265)	(1:206)	
Celiac after SC	<b>137</b>	(1:228)	(1:177)	(1:187)

Yield of Case finding: 15 new CD out of 678 suspected (1:45)

Yield of screening: 19 new CD out of 3559 screened (1:187)

CF Yield/SC Yield = 4:1

Elisa tTG Cost/PoCT Cost 6:1

Additional costs for CF: those of the unrecognized CD

Additional costs for SC: those of 1:42 false positive

**TO SUBMIT BY SEPTEMBER 2014**

# Screening vs Case finding in parallel to bridge the diagnostic gap of CD in Sicily

**Background:** more than 2/3 of CD patients are not recognized yet with possible severe consequences in terms of morbidity, mortality and costs. PoCT would be the ideal test to use it provided that its NPV is acceptable

## **Aims:**

- Primary: to assess the yield of two strategies for diagnosing CD in Sicily when they are applied in parallel
- Secondary:  
to assess the **NPV of the PoCT**

## DESIGN AND SETTING:

**Design:** one phase prospective study

**Settings:** Family Pediatrician (FP), General Practitioner (GP)  
Office and Referral centers for CD in Sicily

**Funded** by PSN 2012

TO FINISH BY JULY 2014 AND

TO SUBMIT BY OCTOBER 2014

# Objectives to center June-December 2014

- To make affordable the diagnostic work-up of CD
  - \* Case finding or screening?
  - \* To disseminate a cheap and rapid Point-of-Care Test
  - \* To simplify the diagnostic work-up applying if any new ESPGHAN guidelines

Widespread application of a new  
generation rapid test for  
diagnosing celiac disease in the  
Mediterranean area

# Aim of PoCT study

- To assess which are the factors that can influence results of an already validated second generation commercial PoCT for detecting CD at primary care settings in the Mediterranean area.

- On behalf of Mediceal network in the study participated:
- Italy – Sicily
- Slovenia
- Turkey
- (Greece, Tunisia)

# Results

PoCT PPV and rate for 1000 for PoCT and CD

COUNTRY	Persons (and No.) performing test	SUBJECTS TESTED	POCT + (PPV)	CD	RATE PER THOUSAND	
					POCT +	CD
ITALY	Family (39) pediatricians	3559	111 (16%)	17	31.18	4.77
SLOVENIA	Nurse (1) Student (2) Pediatrician(1)	1480	18 (33%)	6	12.16	4.05
TURKEY	Nurse (1) Pediatrician(1)	771	2* (N.A.)	1	2.59	1.30

# Conclusions

- Interpretation by different number of personnel of the doubtful results and the test lecture time may influence the performance of PoCT
- Dissemination of PoCT seems to be urgent to implement in people of countries with limited resources such as the rural population and school children
- In general it may be cost/effective keeping into account excess cost of undiagnosed symptomatic CD
- **TO SUBMIT BY JUNE 2014**

# Objectives to center June-December 2014

- To make affordable the diagnostic work-up of CD
  - \* Case finding or screening?
  - \* To disseminate a cheap and rapid Point-of-Care Test
  - \* To simplify the diagnostic work-up applying new ESPGHAN guidelines

# Prospective study aims:

- To identify the factors that may influence the onset of CD in Mediterranean basin
- To identify clinical and laboratory data which can predict the diagnosis of the disease
- To determine where the new ESPGHAN diagnostic criteria could be applied and what % of patients can omit the biopsy

# Service and survey design:

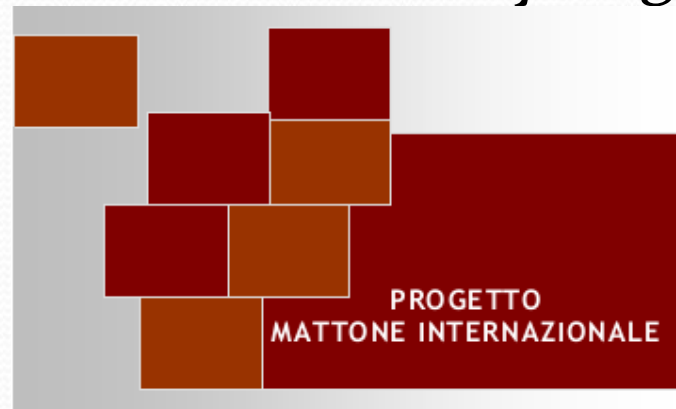
- Prospective cohort observational survey
- Duration: April 2013 to March 2014 prolonged up to July
- Setting: 13 CD centers from 12 Mediterranean countries: Albania, Algeria, Croatia, Egypt, Greece, Italy, Malta, Montenegro, Morocco, Slovenia, Tunisia, Turkey
- Sample: unselected new cases referred for suspected CD

# Patients

- Data of patients were collected and put into a web-based database of Mediceal Mediterranean Network ([www.mediceal.unina.it/](http://www.mediceal.unina.it/))
- Interim analysis April 2014 on 1045 patients in Palermo
- To finish by July 2014 and
- To submit by October 2014

# Cooperation among MEDICEL partners and with other partners

- Auto Immunity (by PC) Assisted Diagnosis (AIDA) Italy – Tunisia Project
- In order to confirm the diagnosis of CD omitting intestinal biopsy according to new ESPGHAN guidelines EMA Indirect Immunofluorescence Assay will be standardized by a PC Assisted Device
- Agreement signature with Messina Regional Referral Center for Celiac Disease of Sicily Region Health Department



# Objectives to center June-December 2014

- To make affordable the diagnostic work-up of CD
- To make affordable a gluten free diet

From advertisement on how to eat lasagne and maccheroni in the desert to.....

A steel mill to ground the corn, rice and other gluten-free by the families themselves !

*Broyeur à épices et tous produits en poudre*



Construction de MACHINES

Société YANGUI METAL  
Route de Tunis km 11,5 Stax - Tunisie  
Tél.: +216 74 861 834 - 74 861 164 - Fax : +216 74 861 782  
Web: [www.yangui-metal.com](http://www.yangui-metal.com) - E-mail: [contact@yangui-metal.com](mailto:contact@yangui-metal.com)

## Gluten-free cooking in Dijerba !



## MEDI-GLU Mediterranean Gluten-Free Life

- Two young men travelled around the MED countries and directly collected from each country local traditional gluten-free recipes
- More than 80 recipes of national dishes naturally gluten-free were edited and revised professionally
- A video- Utube – disk entitled « Gluten Free Life in the Mediterranean Area » is under final production

# Prospectives of MEDICEL Network

- Reinforce a shared base for research projects :
  - Evaluate environmental and personal risk factors across countries
  - Explore the 'early days' from conception to first year of life
  - Establish national repositories of samples
- Disseminate the MEDI-GLU message
- Support the quality control of diagnostic methods
- Expand bilateral cooperation

## Expanding MEDICEL: Special Projects

- Possible application of the Rome Criteria for Functional Gastrointestinal Disorders in Children (AM Staiano) MED-FGID
- Helping for Rare Disease : MEDI-HIP Hereditary Intestinal Poliposys (T Attard)
- Breast Feeding and Infant Feeding in the Mediterranean Area MEDI-FEED : (C Panico)