SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA

Regione Emilia-Romagna

Fe. D. E. R.

Ciclo di laboratori regionali
Medicina di genere ed equità

2° laboratorio

Diabete

11 novembre 2019
9.00 – 14.00
Terza Torre della Regione Emilia-Romagna – sale B-C-D
Viale della Fiera 8 - Bologna

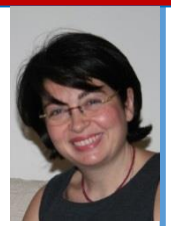
Il Diabete in una prospettiva di Genere

Valeria Manicardi
Specialista Diabetologia
Coordinatore nazionale Annali AMD
Reggio Emilia

Pari Opportunità …. di rischio CV:

Le donne Diabetiche sono colpite da Infarto tanto come gli uomini:

- hanno perso la protezione ormonale dall'infarto in età fertile



Editorial

Type 2 Diabetes and Cardiovascular Risk in Women

Giuseppina T. Russo,[1] Giovannella Baggio,[2] Maria Chiara Rossi,[3] and Alexandra Kautzky-Willer[4]

[1]*Dipartimento di Medicina Clinica e Sperimentale, Policlinico Universitario "G. Martino" , Via C. Valeria, 98121 Messina, Italy*
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[3]*Laboratory of Clinical Epidemiology of Diabetes and Chronic Diseases, Fondazione Mario Negri Sud, Via Nazionale 8/A, 66030 Santa Maria Imbaro, Italy*
[4]*Gender Medicine Unit, Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, Austria*

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Received 18 January 2015; Accepted 18 January 2015

Cardiovascular diseases (CVD) are the leading cause of death, also in diabetic women. Since 1998, when Haffner et al. [1] stated that subjects with type 2 diabetes mellitus (T2DM) had a CVD risk "equivalent" to previous myocardial infarction, a large number of studies have shown that this relative risk for CVD due to diabetes is greater in women than in men [2].

CVD in diabetic subjects is not entirely related to chronic hyperglycaemia and a number of other factors such as dyslipidemia, hypertension, hormonal, genetic, and environmental factors, as well as low-grade systemic inflammation and endothelial damage, lifestyle behaviours, adherence to therapies, and/or psychosocial factors may contribute to the worst outcomes observed in diabetic women. Notably, it is increasingly recognized that many of these factors show gender differences in their prevalence and/or association with CVD events, and this aspect should be specifically targeted when aiming at primary or secondary CVD prevention in diabetic subjects.

In this special issue, we looked at CVD in women than in males for mortality for all causes, for CVD, and for myocardial infarction and renal causes. In the other study, G. Luo et al. showed in a retrospective analysis that fasting plasma glucose was an independent predictor of in-hospital mortality for nondiabetic female patients.

Gender-specific prevalence and management of major and emerging CVD risk factors in different populations were also the main topic of several papers of this special issue.

The paper by S. Chen et al., with a very interesting experimental protocol, clarified the relationships of albuminuria, a well-recognized CVD risk factor, with circulating levels of angiopoietin-1 (Ang-1), Ang-2, and vascular endothelial growth factor (VEGF) in serum and urine.

Potential gender differences in the distribution and control of major CVD risk factors were investigated in another three very large high-risk populations. Thus, in the eControl Study, a study on 286,791 patients with T2DM in Catalonia, Spain, J. Franch-Nadal et al. found that cardiometabolic control was worse in subjects with prior CVD; but control

Studi N-Hanes:

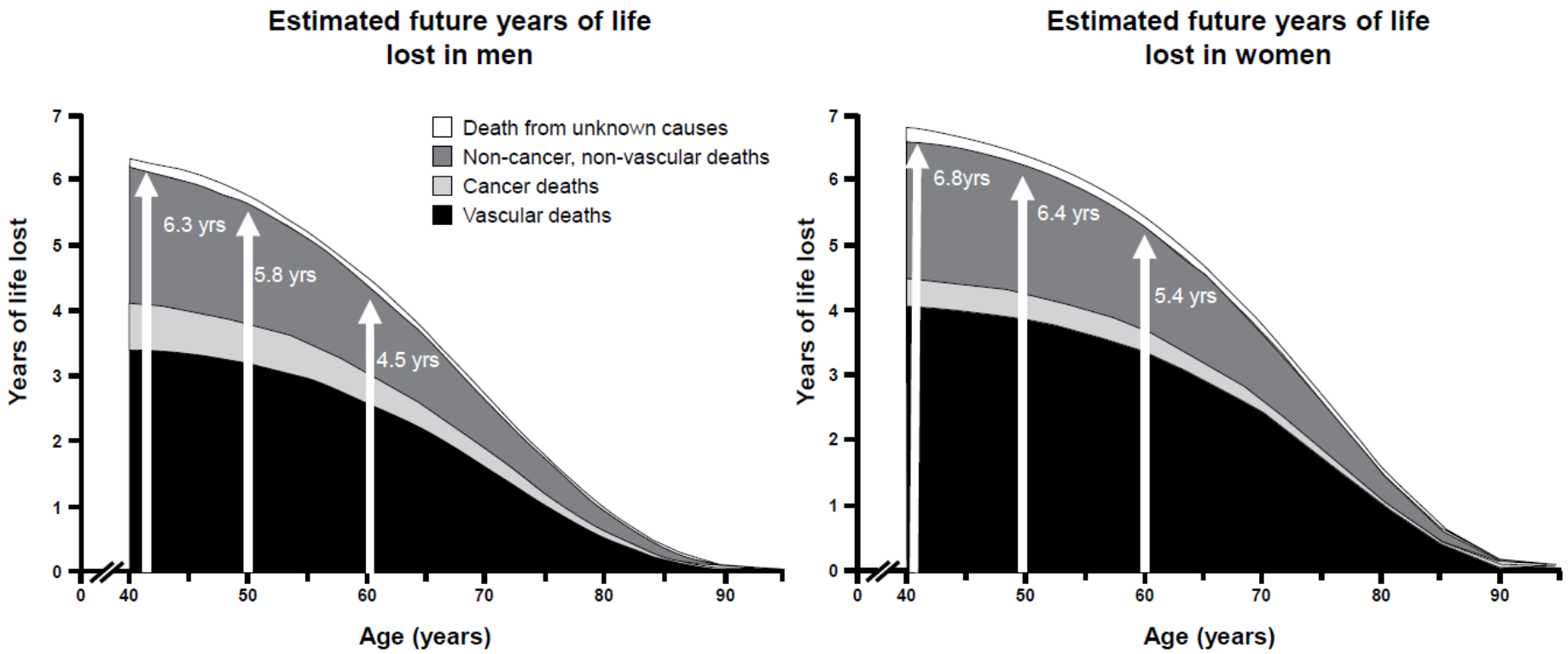
< CHD nella pop generale

Non nel DM

> Nelle Donne con DM

Intern J Endocrinology ,2015

T2DM is associated with premature death from CV and non-CV causes



Arrows indicate the number of years of life lost incurred at specific ages by men or women with diabetes but without a history of vascular disease
CV, cardiovascular
Emerging Risk Factors Collaboration. *N Engl J Med* 2011;364:829–841

Anni di vita persi in DT2 in base al genere

Excess risk of fatal coronary heart disease associated with diabetes in men and women: meta-analysis of 37 prospective cohort studies

Rachel Huxley, Federica Barzi, Mark Woodward

BMJ, 21 December 2006)

Abstract

Objective To estimate the relative risk for fatal coronary heart disease associated with diabetes in men and women.
Design Meta-analysis of prospective cohort studies.
Data sources Studies published between 1966 and March 2005, identified through Embase and Medline, using a combined text word and MESH heading search strategy, in addition to studies from the Asia Pacific Cohort Studies Collaboration.
Review methods Studies were eligible if they had reported estimates of the relative risk for fatal coronary heart disease comparing men and women with and without diabetes. Studies were excluded if the estimates were not adjusted at least for age.
Results 37 studies of type 2 diabetes and fatal coronary heart disease among a total of 447 064 patients were identified. The rate of fatal coronary heart disease was higher in patients with diabetes than in those without (5.4 *v* 1.6%). The overall summary relative risk for fatal coronary heart disease in patients with diabetes compared with no diabetes was signific[illegible] 3.50, 9[illegible] After e[illegible] age, th[illegible] reduced but still highly significant. The pooled ratio of the relative risks (women: men) from the 29 studies with multiple adjusted estimates was 1.46 (1.14 to 1.88).
Conclusions The relative risk for fatal coronary heart disease associated with diabetes is 50% higher in women than it is in men. This greater excess coronary risk may be explained by more adverse cardiovascular risk profiles among women with diabetes, combined with possible disparities in treatment that favour men.

RR F vs M nei 29 studi corretti per fattori confondenti = 1,49

Le Donne Diabetiche hanno il 50% in più di rischio di Eventi CV fatali rispetto ai Maschi.

Cause :

- **Peggiore profilo di rischio CV**
- **Sottotrattamento con Statine, ASA, Antiipertensivi**

Donne con DM2 hanno un rischio aumentato di eventi CV e di mortalità del 50% rispetto ai maschi

Recent studies found that men with diabetes or established cardiovascular disease are more likely to receive aspirin, statins, or antihypertensive drugs than are women. For example, one study [illegible] cardiovascular [illegible]% of men with [illegible] reported from the United Kingdom prospective diabetes study,[illegible] where women with diabetes were significantly less likely to use aspirin compared with men. In two recent studies from the United States, women with diabetes were also less likely to be treated with aspirin and lipid lowering agents or to achieve recommended levels of blood pressure or low density lipoprotein cholesterol than were men.[40 41] Therefore more

Le donne con T2DM hanno anche un aumentato rischio di Stroke

Diabetologia (2006) 49:2859–2865
DOI 10.1007/s00125-006-0493-z

ARTICLE

Risk of stroke in people with type 2 diabetes in the UK: a study using the General Practice Research Database

H. E. Mulnier · H. E. Seaman · V. S. Raleigh · S. S. Soedamah-Muthu · H. M. Colhoun · R. A. Lawrenson · C. S. De Vries

Age-adjusted HR for stroke in DM2 subjects vs non diabetic subjects was:
- 2.08 (95%CI:1.94-2.24) in men
- 2.32 (95%CI: 2.16-2.49) in women.

The increase in risk attributable to diabetes was highest
- in young women (HR 8.18; 95%CI 4.31-15.51) and decreased with age.

Table 4 Hazard ratios (95% CI) for stroke in diabetes compared with no diabetes stratified by sex and attained age-group

	All	Men	Women
Diabetes/no diabetes (*n*)	41,799/ 202,733	22,178/ 107,285	19,621/ 95,448
Age (years)			
35–54	5.64 (3.91–8.13)	4.66 (2.96–7.33)	8.18 (4.31–15.51)
55–64	3.81 (3.23–4.49)	3.31 (2.69–4.07)	4.89 (3.71–6.45)
65–74	2.54 (2.31–2.79)	2.35 (2.07–2.65)	2.83 (2.45–3.28)
75–84	1.90 (1.75–2.06)	1.69 (1.49–1.90)	2.10 (1.89–2.34)
≥85	1.69 (1.49–1.92)	1.60 (1.28–1.99)	1.74 (1.49–2.03)
All ages	2.19 (2.09–2.32)	2.08 (1.94–2.24)	2.32 (2.16–2.49)

Diabete: Differenze di genere nel Rischio CV

Current Diabetes Reports (2018) 18: 33
https://doi.org/10.1007/s11892-018-1005-5

DIABETES EPIDEMIOLOGY (E SELVIN AND K FOTI, SECTION EDITORS)

Sex Differences in the Burden and Complications of Diabetes

Sanne A. E. Peters[1] · Mark Woodward[1,2,3]

Published online: 18 April 2018

Abstract

Purpose of the Review To review the latest evidence on sex differences in the b
the potential explanations for the sex differences described.

Recent Findings Diabetes is a strong risk factor for vascular disease, with comp
diseases conferred by diabetes are considerably greater in women than men.
relative risk of vascular disease from diabetes are unknown. Sex differences
management, and treatment of diabetes and its complications could contribute to
complications. However, since the excess risk of vascular disease is not seen
biological factors may be more likely to be involved. In addition to other cardio
composition and fat distribution may be particularly important in explainin
complications of diabetes.

Summary There is strong evidence to suggest that diabetes is a stronger risk
Although several mechanisms may be involved, further research is needed to
anisms underpinning sex differences in the association between diabetes an
patients, health care professionals, and policy makers to ensure that women
and will help to reduce the burden in both sexes.

Keywords Diabetes · Cardiovascular disease · Men · Women · Sex differences

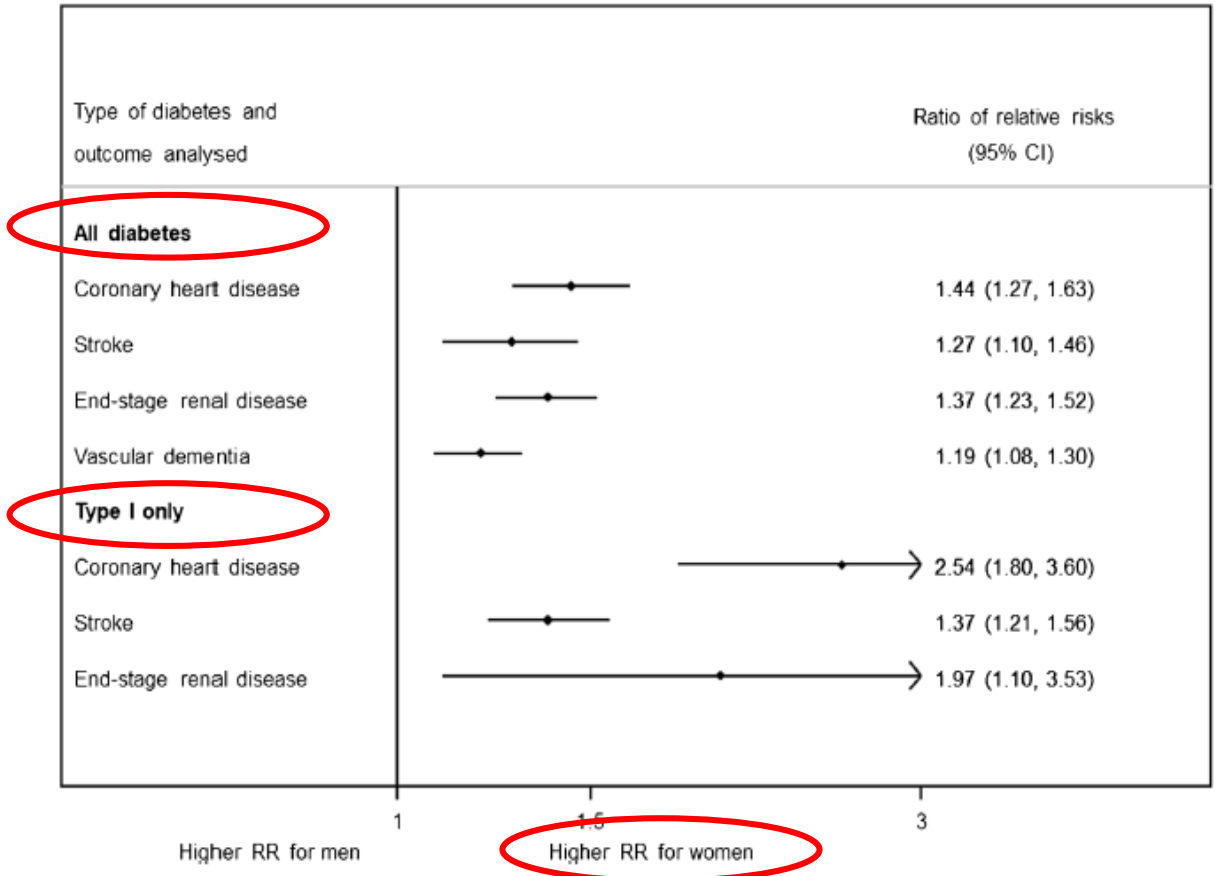


Fig. 2 Results from prior meta-analyses of sex differences in the effects of diabetes on vascular outcomes, summarised through the ratios of women-to-men adjusted relative risks (and 95% confidence intervals) pooled across cohort studies

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Azienda Unità Sanitaria Locale di Reggio Emilia
IRCCS Istituto in tecnologie avanzate e modelli assistenziali in oncologia

Registro Diabete a Reggio E

- Dal 2009 è stato costruito il Registro Diabete
- Attraverso il **Link di 6 banche Dati**
- Approvato dal Comitato Etico
- Validata la metodologia

DIABETES RESEARCH AND CLINICAL PRACTICE 103 (2014) 79–87

Contents available at ScienceDirect

Diabetes Research and Clinical Practice

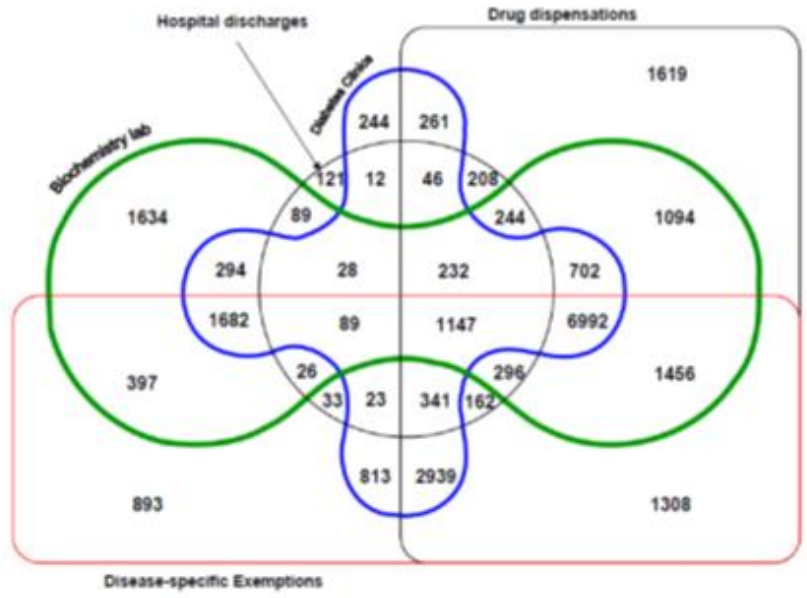
journal homepage: www.elsevier.com/locate/diabres

ELSEVIER

International Diabetes Federation

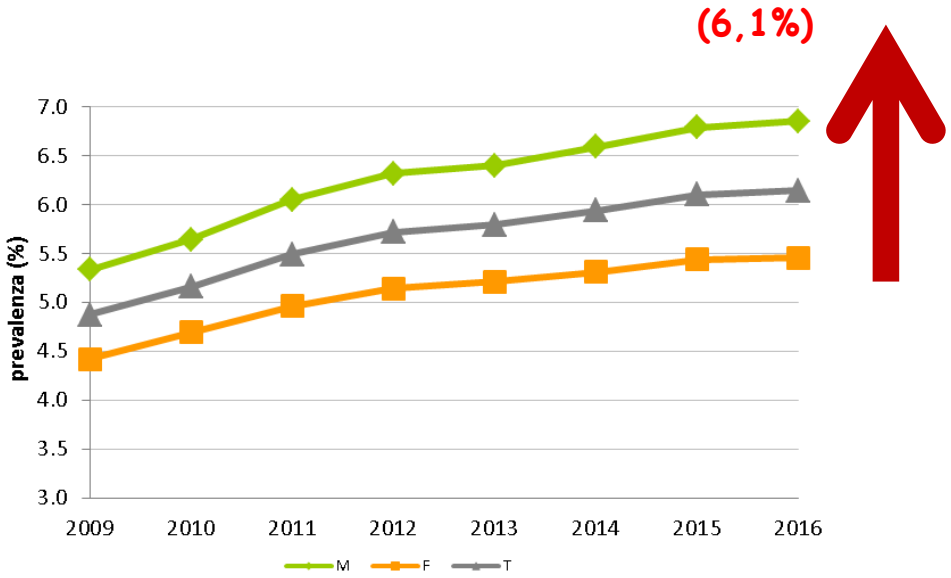
Building a population-based diabetes register: An Italian experience

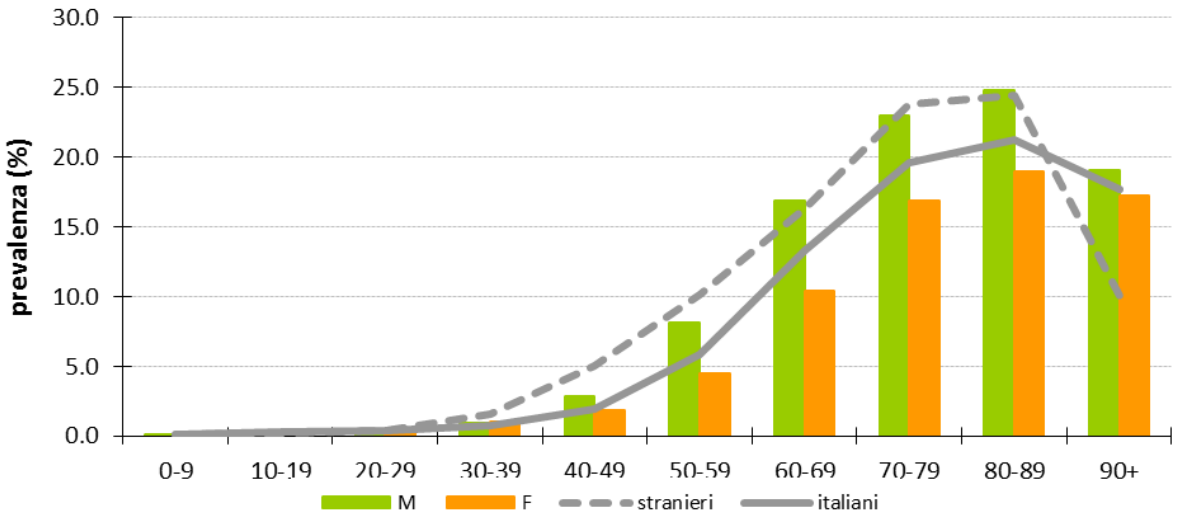
Paola Ballotari[a], Sofia Chiatamone Ranieri[b,*], Massimo Vicentini[a], Stefania Caroli[a], Andrea Gardini[c], Rossella Rodolfi[d], Roberto Crucco[e], Marina Greci[f], Valeria Manicardi[g], Paolo Giorgi Rossi[a]



Registro Diabete a Reggio Emilia: Prevalenza

Trend temporali per anno





Anno 2016

- 17924 (6,9%) maschi
- 14807 (5,5%) femmine
- 32731 (6,1%) totale (intera provincia di Reggio Emilia)

Anno 2016

- 2583 (4%) stranieri
- 30148 (6,5%) italiani

Research Article

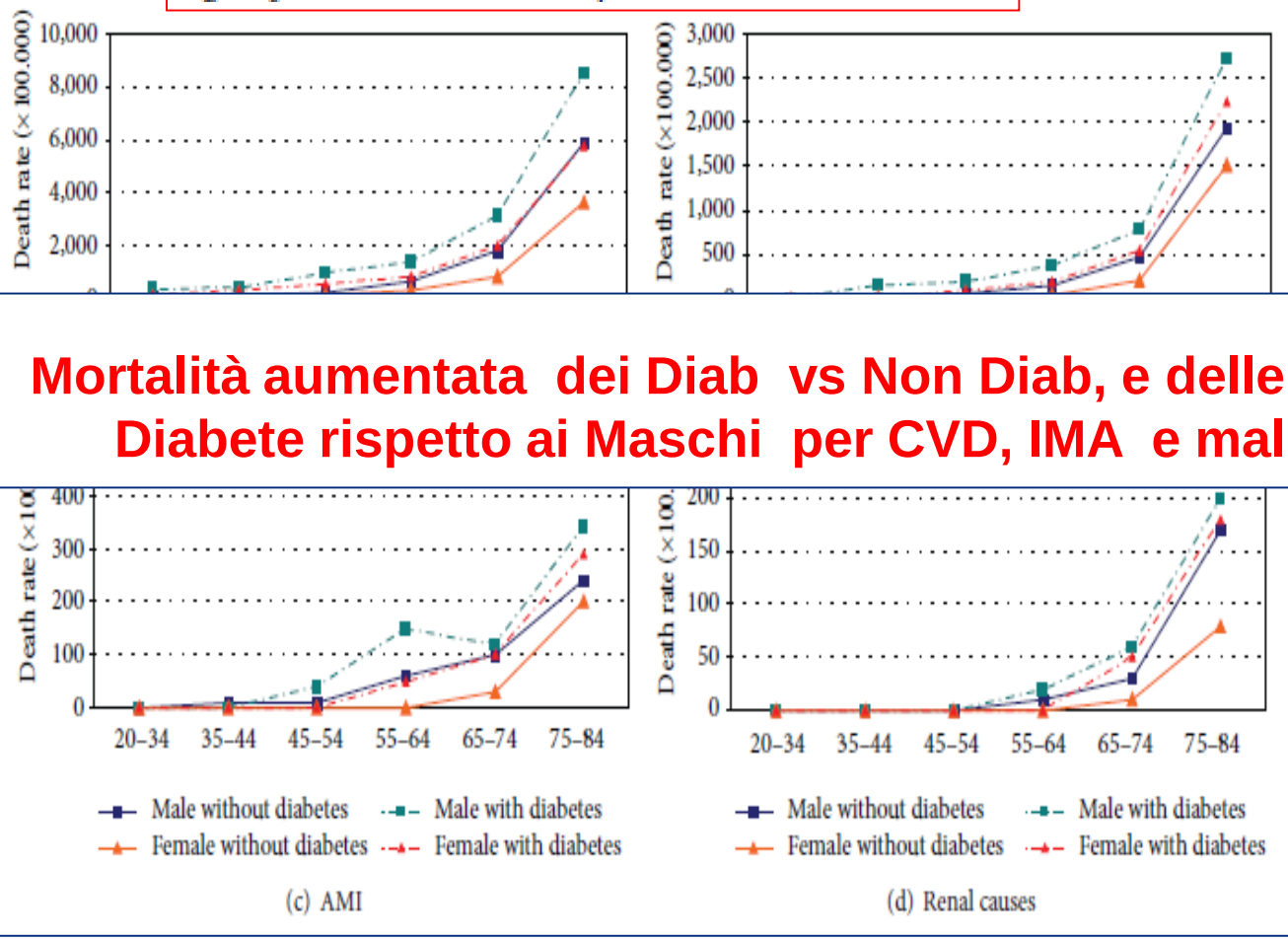
Sex Differences in Cardiovascular Mortality in Diabetics and Nondiabetic Subjects: A Population-Based Study (Italy)

Paola Ballotari,[1,2] Sofia Chiatamone Ranieri,[3] Ferdinando Luberto,[1,2] Stefania Caroli,[1,2] Marina Greci,[4] Paolo Giorgi Rossi,[1,2] and Valeria Manicardi[5]

Hindawi Publishing Corporation
International Journal of Endocrinology
Article ID 914057

Dati della Provincia di Reggio Emilia, 2014

Age-specific death rates by sex and diabetes status:



Mortalità aumentata dei Diab vs Non Diab, e delle Donne con Diabete rispetto ai Maschi per CVD, IMA e mal Renale

Eccesso di Rischio nelle Donne con DT2 .

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IRCCS Istituto in tecnologie avanzate e modelli assistenziali in oncologia

CLINICAL Cancer Centre

Research Article

International Journal of Endocrinology
Volume 2017, Article ID 6039356, 9 pages

MACE

Sex Differences in the Effect of Type 2 Diabetes on Major Cardiovascular Diseases: Results from a Population-Based Study in Italy

Paola Ballotari,[1,2] Francesco Venturelli,[3] Marina Greci,[4] Paolo Giorgi Rossi,[1,2] and Valeria Manicardi[5]

	UOMINI			DONNE		
EVENTO:	**SENZA DM2**	**CON DM2**	**IRR (95%CI)**	**SENZA DM2**	**CON DM2**	**IRR (95%CI)**
ICTUS	37.28	74.70	**1.86 (1.68-2.06)**	30.10	61.73	**1.81 (1.60-2.04)**
INFARTO	39.04	78.02	**1.78 (1.60-1.98)**	16.13	47.58	**2.58 (2.22-2.99)**
SCOMPENSO	**21.47**	**63.71**	**2.78 (2.48-3.12)**	**17.10**	**48.83**	**2.59 (2.27-2.97)**

I Diabetici hanno un rischio aumentato (quasi doppio per ICTUS E INFARTO, quasi triplo per SCOMPENSO), ma le DONNE con DT2 hanno un RISCHIO di IMA >> Maschi

Diabetologia (2019) 62:1761–1772
https://doi.org/10.1007/s00125-019-4939-5

REVIEW

Sex differences in the burden of type 2 diabetes and cardiovascular risk across the life course

Amy G. Huebschmann[1,2] · Rachel R. Huxley[3,4] · Wendy M. Kohrt[1,5,6] · Philip Zeitler[7] · Judith G. Regensteiner[1,2,8] · Jane E. B. Reusch[1,6,9]

Received: 20 April 2019 / Accepted: 29 May 2019 / Published online: 27 August 2019

In terms of relative risk for CVD, large meta-analyses of observational data have shown that women with type 2 diabetes have 25–50% greater excess risk of an incident cardiovascular event compared with similarly affected men [1, 15, 72, 73]. For example, recent data from the UK Biobank showed that, in the presence of type 2 diabetes, the excess risk of a cardiovascular event was approximately 50% higher in women (HR 1.96 [95% CI 1.60, 2.41]) than in men (HR 1.33 [95% CI 1.18, 1.51]) [74].

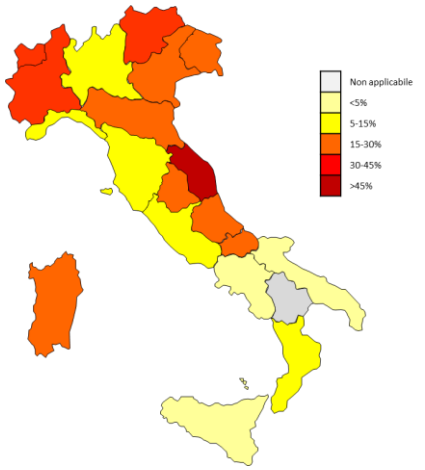
Annali AMD: 46 Indicatori di performance della assistenza erogata alle persone con Diabete in Italia

Un Audit Clinico nazionale sulla Q di cura erogata nel Real Word nella rete dei Servizi di Diabetologia del SSN

I volumi

N=86 N=95 N=122 N=124 N=251 N=251 N=320

123.863 → → → → → 451.859



2017

N=320

N.222

2018

Misurare i risultati : Cartella informatizzata SDC

La Cartella SDC in rete aziendale

Nella AUSL di Reggio E :

- Link con Anagrafe Sanitaria
- Link con il laboratorio
- Link con il Repository Aziendale (invio referti, recupero referti)
- Link con la Ricetta DEMA
- Link quotidiano con banca dati ISTAT : chiusura cartella (e GI) per Morte con data di morte
- Link con CUP per prenotazione/ erogazione prestazioni

Uso del file dati AMD in sede locale:

- per misurare gli esiti
- per dimostrare le proprie performance non solo quantitative nei budget
- per identificare azioni di miglioramento nel team
- Per confrontarsi con gli altri servizi della rete aziendale
- Per confrontarsi in Regione
- Per confrontarsi tra Regioni e con i dati nazionali

La Medicina di Genere in Diabetologia nasce in AMD nel 2010 :

il patrimonio degli ANNALI in ottica di genere

Esistono differenze legate al genere

- nella **Qualità della Cura erogata ?**
- nel **profilo di rischio CV ?**
- nella **appropriatezza ed intensità di cura ?**

Le differenze di genere sono giocate tra differenze di natura fisiopatologica e differenze di natura assistenziale.

Le 1° Monografie di genere

anno 2011

Differenze di Genere

Nel DT2 — Nel DT1

415.320 DT2 seguiti da 236 servizi in Italia nel 2009.

28.802 DT1 seguiti da 320 servizi di diabetologia in Italia nel 2011

2012

(Diabetes Care 36:3162-3168,2013).

2014

(PLOS One – Ottobre 2016)

Epidemiology/Health Services Research
ORIGINAL ARTICLE

DT2

Sex Disparities in the Quality of Diabetes Care: Biological and Cultural Factors May Play a Different Role for Different Outcomes

A cross-sectional observational study from the AMD Annals initiative

MARIA CHIARA ROSSI, MSCPHARMCHEM[1]
MARIA ROSARIA CRISTOFARO, MD[2]
SANDRO GENTILE, MD[3]
GIUSEPPE LUCISANO, MSCSTAT[1]
VALERIA MANICARDI, MD[4]
MARIA FRANCA MULAS, MD[5]
ANGELA NAPOLI, MD[6]
ANTONIO NICOLUCCI, MD[1]
FABIO PELLEGRINI, MSCSTAT[1]
CONCETTA SURACI, MD[7]
CARLO GIORDA, MD[8]
ON BEHALF OF THE AMD ANNALS STUDY GROUP*

Gender medicine integrates aspects of biology, sociology, ethnicity, and culture responsible for different responses to care in women and men (1). Gender medicine applied to the field of diabetes care is particularly relevant because women with diabetes, regardless

OBJECTIVE—To investigate the quality of type 2 diabetes care according to sex.

- ✓236 centri
- ✓188,125 donne
- ✓227,169 uomini

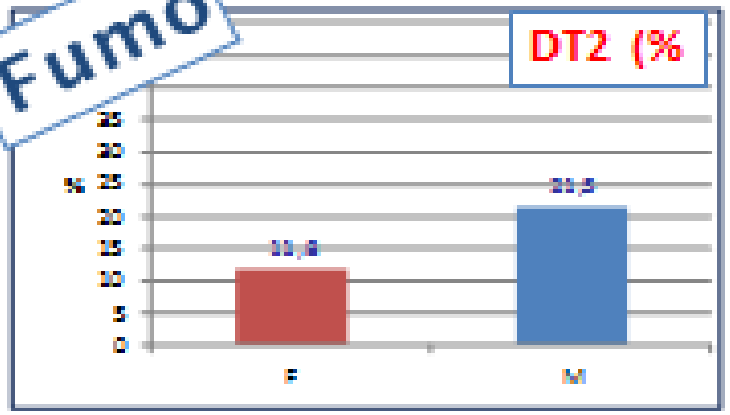
Differenze di genere nel DT2

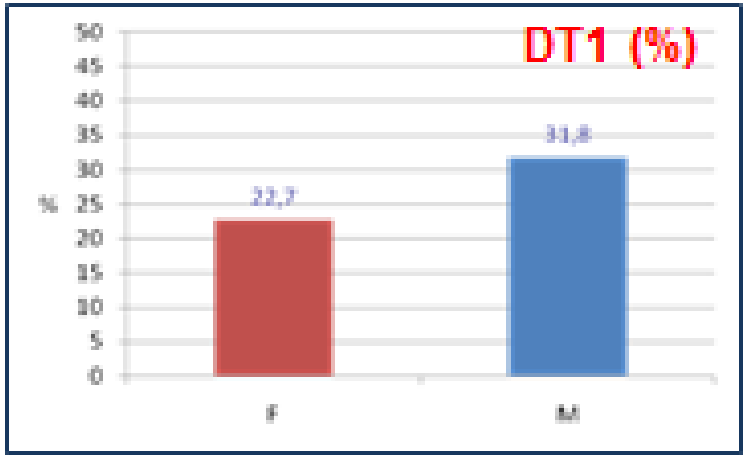
- **COMPENSO METABOLICO (HbA1c)**
- **OBESITA' (BMI)**
- **PROFILO LIPIDICO (LDL-C)**

Figure 1. Favorable outcomes in diabetic men and women and age (*AMD Annals*). The intermediate outcomes (target of HbA1c, PA, C-LDL, BMI) are systematically in favor of men, independently of age.

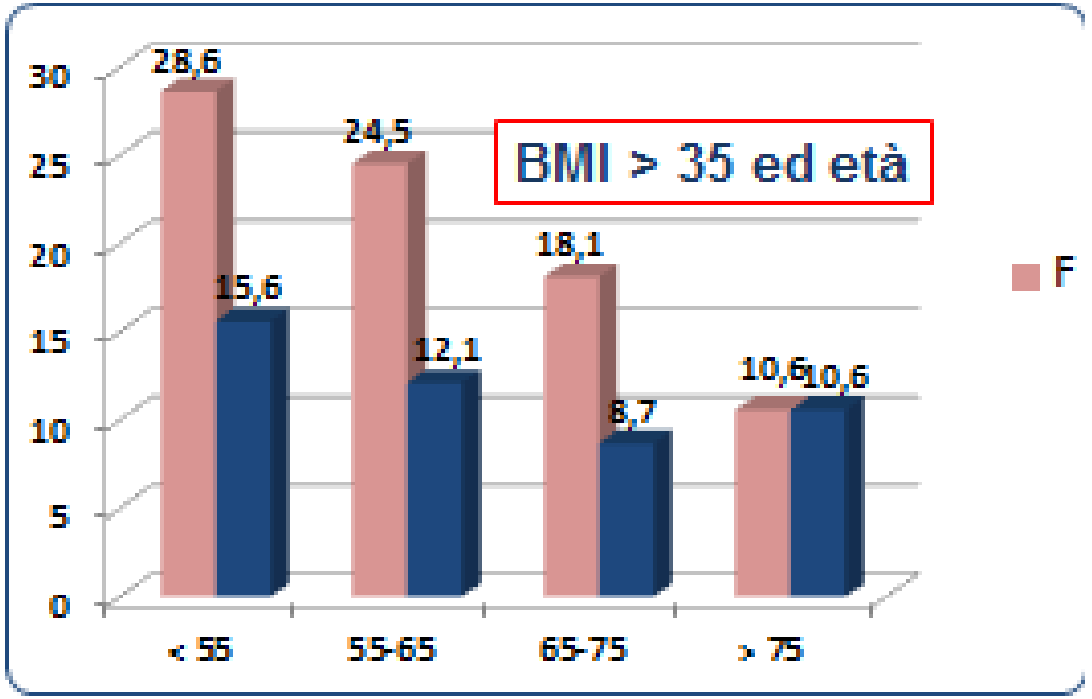
FUMO e BMI nel Diabete

Fumo





DT2



OBESITA' medio-severa > nelle donne con DT2

Il mancato raggiungimento dei target di LDL-C è sempre a sfavore delle Donne con DT2 :

- ***Sia trattate che non tratte con Statine***
- ***le differenze aumentano con età e durata del DM.***

Le Donne con DT2 più anziane sono a maggior rischio di CHD.

Profilo LIPIDICO

Hindawi Publishing Corporation
International Journal of Endocrinology
Volume 2015, Article ID 957105, 8 pages
http://dx.doi.org/10.1155/2015/957105

Research Article

Age- and Gender-Related Differences in LDL-Cholesterol Management in Outpatients with Type 2 Diabetes Mellitus

Giuseppina Russo,[1] Basilio Pintaudi,[2] Carlo Giorda,[3] Giuseppe Lucisano,[2] Antonio Nicolucci,[2] Maria Rosaria Cristofaro,[4] Concetta Suraci,[5] Maria Franca Mulas,[6] Angela Napoli,[7] Maria Chiara Rossi,[2] and Valeria Manicardi[8]

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[2]*Department of Clinical Pharmacology and Epidemiology, Fondazione Mario Negri Sud, Via Nazionale, 66030 S. Maria Imbaro, Italy*
[3]*Diabetes and Metabolism Unit, ASL TO5, 10023 Chieri, Italy*
[4]*Diabetes and Endocrinology Unit, Cardarelli Hospital, 86100 Campobasso, Italy*
[5]*Diabetes and Metabolism Unit, Sandro Pertini Hospital, 00157 Rome, Italy*
[6]*Diabetes and Metabolic Diseases Unit, San Martino Hospital, 09170 Oristano, Italy*
[7]*Department of Clinical and Molecular Medicine, Faculty of Medicine and Psychology, S. Andrea Hospital, Sapienza University, 00189 Rome, Italy*

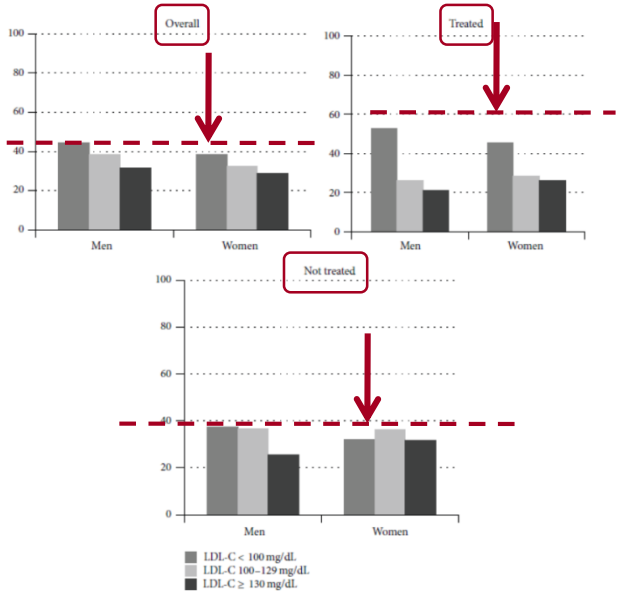
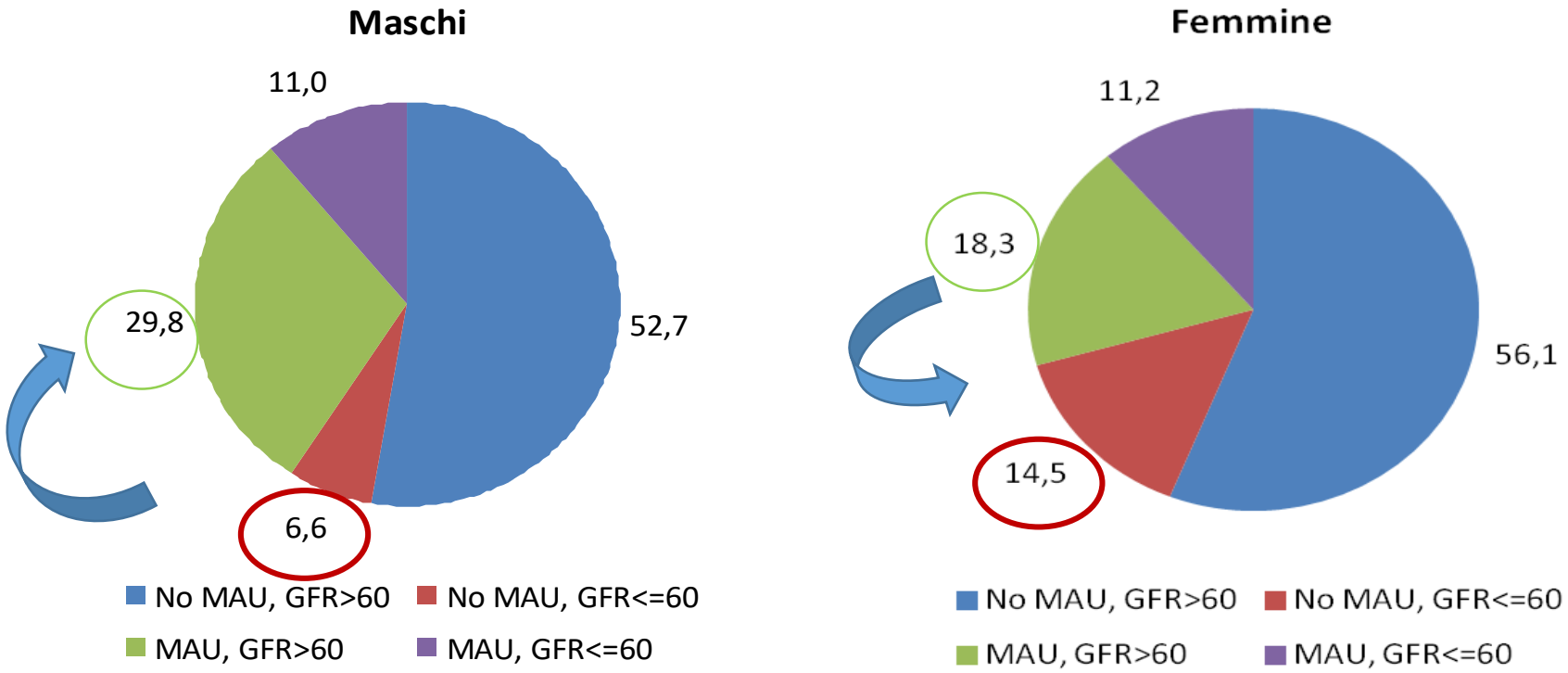


Figure 1: LDL-C classes according to gender and lipid-lowering treatment.

Differenze di genere e funzione renale : presenza di MAU e di riduzione del GFR (%)

RENE



Nephrol Dial Transplant (2014) 29: 657–662
doi: 10.1093/ndt/gft506
Advance Access publication 6 January 2014

Kidney dysfunction and related cardiovascular risk factors among patients with type 2 diabetes

Salvatore De Cosmo[1], Maria Chiara Rossi[2], Fabio Pellegrini[2], Giuseppe Lucisano[2], Simonetta Bacci[1], Sandro Gentile[3], Antonio Ceriello[4], Giuseppina Russo[5], Antonio Nicolucci[2], Carlo Giorda[6], Francesca Viazzi[7], Roberto Pontremoli[7] and the AMD-Annals Study Group

Il genere influenza le scelte Terapeutiche ?

European Heart Journal (2011) **32**, 1337–1344
doi:10.1093/eurheartj/ehr027

CLINICAL RESEARCH

Factors influencing underutilization of evidence-based therapies in women†

Raffaele Bugiardini[1]*, Andrew T. Yan[2], Raymond T. Yan[2], David Fitchett[2], Anatoly Langer[2], Olivia Manfrini[1], and Shaun G. Goodman[2], on behalf of the Canadian Acute Coronary Syndrome Registry I and II Investigators*

[1]Dipartimento di Medicina Interna, Cardioangiologia, Epatologia (Padiglione 11), University of Bologna, Via Massarenti 9, 40138 Bologna, Italy; and [2]T
Division of Cardiology, St. Michael's Hospital, University of Toronto and the Canadian Heart Research Centre, Toronto, Ontario, Canada

Received 18 October 2010; revised 8 January 2011; accepted 25 January 2011; online publish-ahead-of-print 7 March 2011

See page 1313 for the editorial comment on this article (doi:10.1093/eurheartj/ehr083)

Aims Previous studies have reported differences in the use of … coronary syndromes (ACSs) according to the sex of the patient. We an… …ated with underutilization of evidence-based therapies in women.

Methods and results From the Canadian Registry of ACS I … …7 women) with a final diagnosis of ACS were selected for the current an… …e approach described by Blackstone. The final selected model included 23… …less likely than men to receive beta-blockers (75.76 vs. 79.24%; $P < 0.01$… …44%; $P < 0.0001$), and angiotensin-converting enzyme (ACE)-inhibitor… …ex and clinical decision not to investigate with cardiac catheterization we… …s for not receiving lipid-modifying agents and ACE-inhibitors. Age, Killip… …ificant independent predictors of underutilization of beta-blocker use. … 12; $P < 0.01$) with a higher prevalence of Killip class ≥ 2 (19.95 vs. 15.54%; … …kely to be referred for cardiac catheterization (41.9 vs. 49.6%; $P < 0.001$).

Conclu… …monstrate that underutilization of evidence-based therapies in women with ACS compared …ted with multiple factors related to the patient (age), the consequences of the disease (congestive … and the physician's assessment of patient risk (decision to catheterize). Female gender remains associ… …n underutilization of lipid-modifying agents and ACE-inhibitors despite adjustment for these confounders.

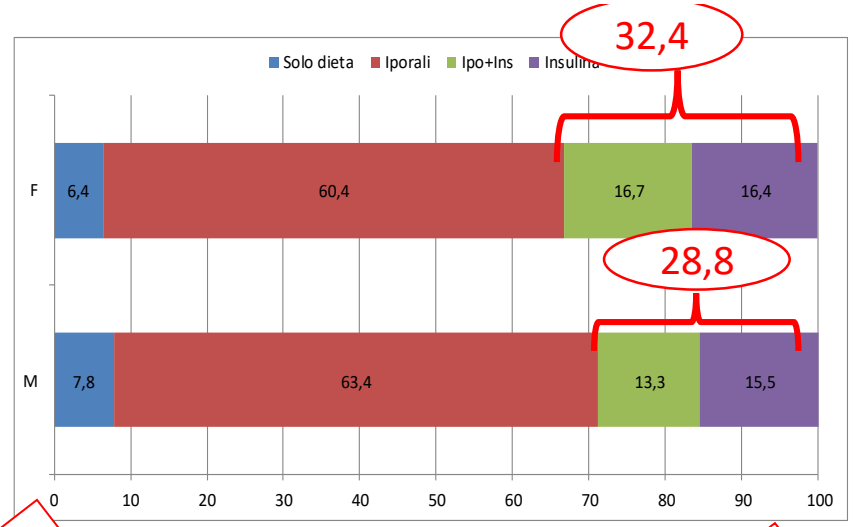
Key… Women • Evidence-based therapies

WHO : Women are not little men

Il g… …minile
…predittore
…endente di sotto
Utilizzo di Statine
e ACE-I

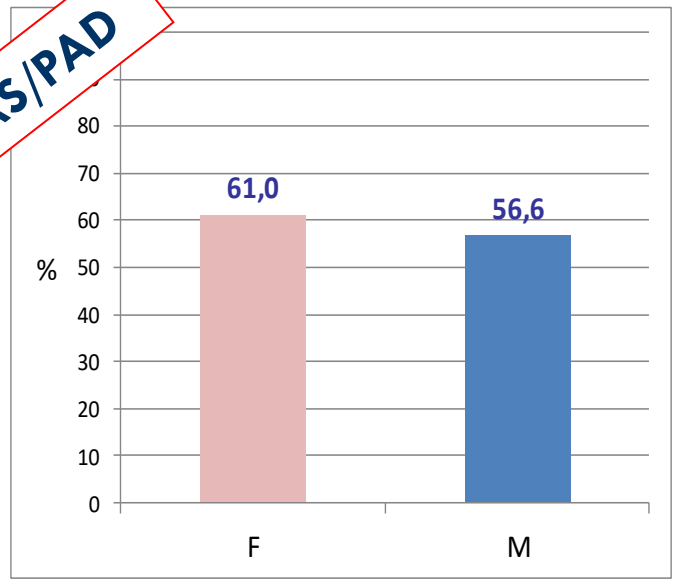
Sottotrattamento delle donne con Diabete vs uomini

DT2 – Trattamento del diabete . Appropriatezza e Intensità



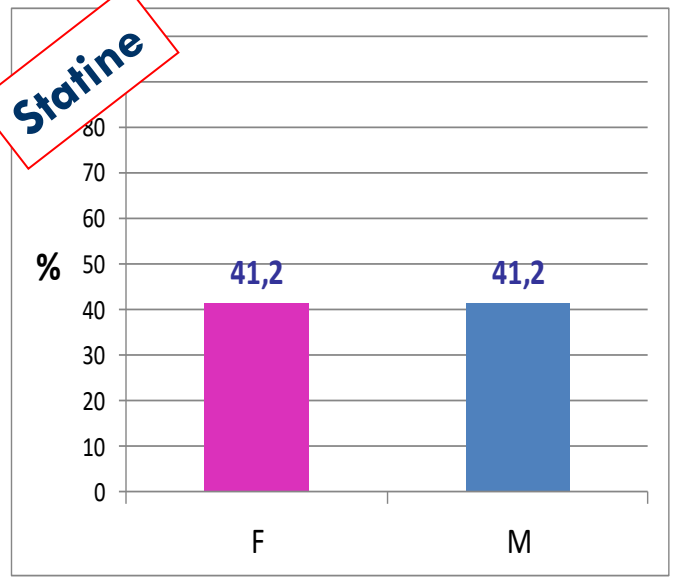
Le donne con DT2 sono trattate più intensamente :
con Insulina e Insulina + Ipo-Orali

PAS/PAD



Le donne sono più trattate con farmaci antiipertensivi e con più di 2 farmaci.

Statine



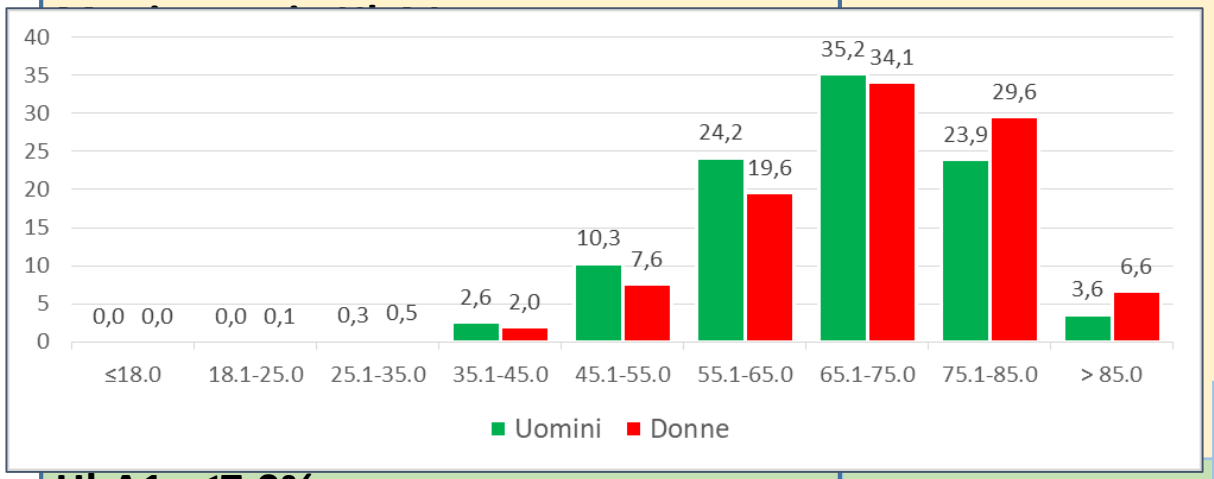
Stessa % di M e F trattati con statine

Dopo 6 anni cosa è cambiato ? DT2

222 servizi di diabetologia nell'anno 2016.

2011 **DT2** **2016**

Indicatore	Maschi (M) (%)	Femmine (F) (%)	Delta F-M (%)	Maschi (M) (%)	Femmine (F) (%)	Delta F-M (%)
N	227.169	188.125		242.422	184.696	
		92,2	-0,4	96,9	97,0	+0,1
		72,4	-1,7	72,5	72,1	-0,4
		78,4	-0,7	90,2	90,1	-0,1
		40,1	-2,3	56,4	54,4	-2,0
		30,7	-3,6	38,2	33,6	-4,6
		12,1	-1,9	21,3	19,0	-2,3
HbA1c ≤7,0%	45,5	41,7	-3,8	52,6	48,8	-3,8
HbA1c >8,0%	26,9	29,1	+2,2	18,7	21,2	+2,5
HbA1c >9,0% nonostante il trattamento con insulina	47,3	37,6	-9,7	30,1	24,6	-5,5



Dopo 6 anni cosa è cambiato ?

Indicatore	2009 DT2 Maschi (M) (%)	2009 DT2 Femmine (F) (%)	2009 DT2 Delta F-M (%)	2016 Maschi (M)(%)	2016 Femmine (F) (%)	2016 Delta F-M (%)
C-LDL <100 mg/dl	44,6	38,4	-6,2	62,7	53,9	-8,8
C-LDL ≥130 mg/dl	23,6	28,9	+5,3	12,7	17,6	+4,9
C-LDL ≥130 mg/dl non trattati con statine	58,5	58,3	-0,2	52,3	51,6	-0,7
C-LDL ≥130 mg/dl nonostante terapia con statine	21,1	25,9	+4,8	10,1	14,3	+4,2
Pressione arteriosa <140/90 mmHg	43,8	41,9	-1,9	52,1	52,6	+0,5
Pressione arteriosa ≥140/90 mmHg	56,2	58,1	+1,9	47,9	47,4	-0,5
Pressione arteriosa ≥140/90 mmHg non trattati	34,2	29,8	-4,4	28,4	23,7	-4,7
Pressione arteriosa ≥140/90 mmHg nonostante il trattamento	60,5	62,2	+1,7	50,0	49,9	-0,1
Trattamento ipolipemizzante	41,2	41,2	0,0	56,7	55,9	-0,8
Trattamento antiipertensivo	56,6	61,0	+4,4	67,5	71,3	+3,8
Score Q <15	7,2	8,5	+1,3	4,6	5,4	+0,8
Score Q >25	38,8	34,2	-4,6	52,7	50,0	-2,7
BMI >=30 Kg/m^2	37,1	46,8	+9,7	38,0	45,8	+7,8
Fumatori	21,5	11,8	-9,7	20,5	12,2	-8,3

Circulation 2016

AHA Scientific Statement

Acute Myocardial Infarction in Women

A Scientific Statement From the American Heart Association

Abstract—Cardiovascular disease is the leading cause of mortality in American women. Since 1984, the annual cardiovascular disease mortality rate has remained greater for women than men; however, over the last decade, there have been marked reductions in cardiovascular disease mortality in women. The dramatic decline in mortality rates for women is attributed partly to an increase in awareness, a greater focus on women and cardiovascular disease risk, and the increased application of evidence-based treatments for established coronary heart disease. This is the first scientific statement from the American Heart Association on acute myocardial infarction in women. Sex-specific differences exist in the presentation, pathophysiological mechanisms, and outcomes in patients with acute myocardial infarction. This statement provides a comprehensive review of the current evidence of the clinical presentation, pathophysiology, treatment, and outcomes of women with acute myocardial infarction. (*Circulation*. 2016;133:00-00. DOI: 10.1161/CIR.0000000000000351.)

BMI=>30 : F 45,8%

Obesity and Type 2 DM

compared with lean women.[169] Obesity is a major risk factor for AMI in women and increases their risk almost 3-fold.[170] The risk of AMI associated with the metabolic syndrome is higher in younger women than any of the other groups, increasing their odds of AMI almost 5-fold.[171] DM, related to obesity and the metabolic syndrome, is associated with a higher relative risk of coronary events in women compared with men, in part as a result of a higher rate of coexisting risk factors in women with DM[170] and better survival (relative to men) of women without DM.[172] DM is an especially powerful risk factor in young women, increasing their risk of CHD, including ACS, by 4- to 5-fold.[173] For both men and women with DM, mortality after STEMI or UA/NSTEMI is significantly increased compared with their nondiabetic counterparts at 30 days and 1 year.[174]

OBESITA':
Maggior fattore di rischio di Infarto nella donna(x3)

S.Meabolica e DM : x 4 - 5
Nelle donne giovani

ANNALI 2011

Ital J Gender-Specific Med 2016; 2(2): 60-68

Gender differences in type 2 diabetes (Italy)

Valeria Manicardi[1], Maria Chiara Rossi[2], Elisabetta L Romeo[3], Annalisa Giandalia[3], Mariella Calabrese[4], Elena Cimino[5], Daniela Antenucci[6], Paola Bollati[7], Patrizia Li Volsi[8], Ada Maffettone[9], Guglielmina Speroni[10], Concetta Suraci[11], Elisabetta Torlone[12], Giuseppina Russo[3] (on behalf of Gruppo Donna AMD)

1. Department of Internal Medicine, Hospital of Montecchio, AUSL of Reggio Emilia, Italy; 2. CORESEARCH - Center for Outcomes
tal Medicine, University of Messina, Messina, Italy;
ly; 6. Endocrinology, Lanciano (Chieti), Italy;
Diabetology Department, AAS5, Pordenone, Italy;
ne and Diabetology, Hospital of Codogno (ASST
EM, Perugia, Italy.

Key messages

- Gender-differences have been reported in diabetic patients: in Italy they are less pronounced than in other countries, but it exists despite equal access to specialist care.
- The likelihood to reach metabolic targets (HbA1c, LDL-C, BMI, PA) is systematically unfavorable in diabetic women as compared with men.
- Diabetic women have a worse lipid profile than men, and have a 2-fold higher CHD risk compared
- Pathophysiological factors are involved in the greater difficulty to reach LDL-C targets in diabetic women, despite the same drug treatment in Italy.

enze di genere nell'utilizzo di questi farmaci.
ologici, e non solo, non ancora del tutto cono-
ono queste differenze e vanno esplorati.
e: genere, diabete di tipo 2, rischio cardiova-

Nel DT2 in Italia ci sono differenze a sfavore delle donne (meno evidenti che in altri paesi), ma le donne non sono sottotrattate

I Risultati degli ANNALI 2018 vs 2011 :

Nel DT2 non ci sono diversità di trattamento ,

ma esiti peggiori

Quindi quali differenze ?

- Differenze biologiche /genetiche ?
- Diversa risposta ai farmaci ? (resistenza alle statine, ASA)
- Diversa aderenza alle terapie ?

Il peggiore profilo di rischio CV nelle donne con DT2 può spiegare la loro maggiore mortalità rispetto agli uomini in Italia ?

RISPOSTA alle STATINE , all'ASA.....

Statin Therapy for Secondary Prevention: Is There a Gender Difference? Test for Interaction in Meta-Analysis Revisited

Gutierrez et al,[1] in an analysis of 11 trials with 43,193 patients, concluded that statin therapy has no benefit on stroke and all-cause mortality in women. The investigators found statistically significant 21% and 18% reductions in mortality and stroke with statins for men but only 19% and 8% reductions in women, which did not reach statistical signifi-

Statine e ASA in prev 2aria
Meno efficaci nelle donne

1 – donne meno rappresentate

2 – la terapia con Statine non ha effetti benefici sullo Stroke e su tutte le cause di morte nelle Donne Diabetiche in Prev 2aria.

RESISTENZA o
Discontinuità terapeutica ?

Discontinuità Terapeutica ed eventi CV

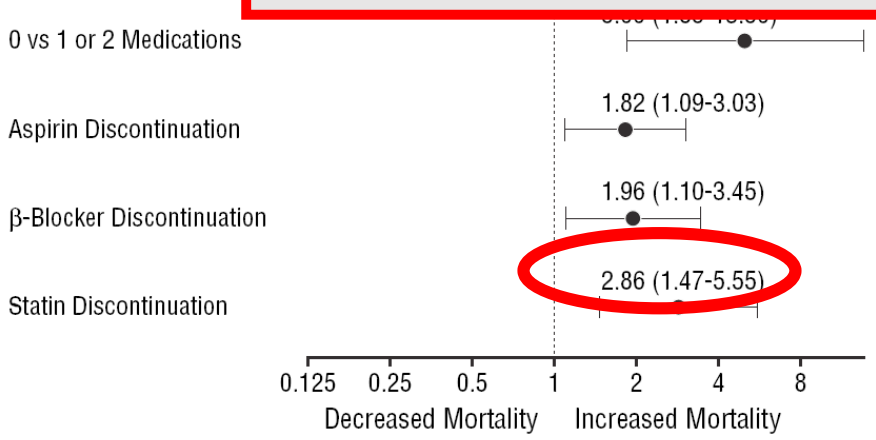
ORIGINAL INVESTIGATION

Impact of Medication Therapy Discontinuation on Mortality After Myocardial Infarction

P. Michael Ho, MD, PhD; John A. Spertus, MD, MPH; Frederi... MD, MSPH; Kimberly L. Reid, MS; Eric D. Peterson, MD, MPH; David J. Magid, MD, MPH; Har...

Arch Intern Med. 2006;166:1842-1847

- **I pazienti che interrompono le statine dopo un IMA hanno una maggiore probabilità di morire (circa 3 volte).**
- **L'effetto dell'interruzione delle statine è maggiore rispetto a beta-bloccanti ed ASA.**



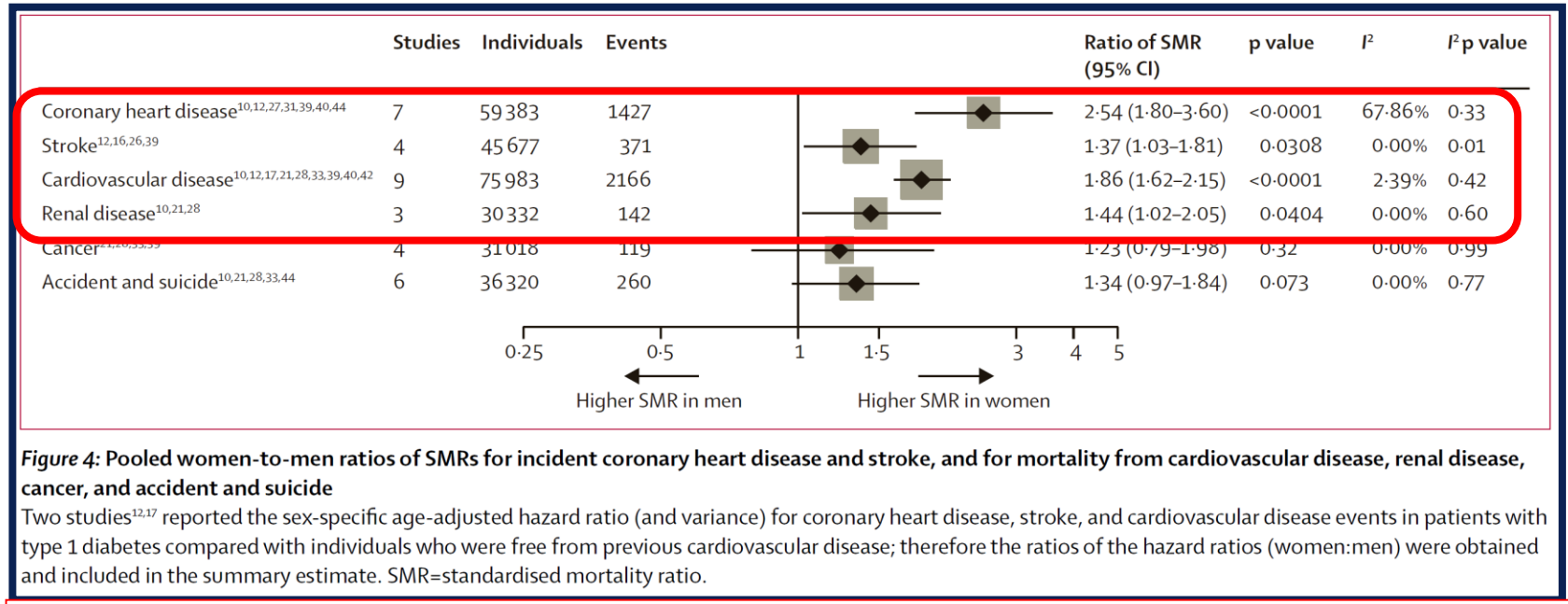
RESISTENZA o Discontinuità terapeutica ?

Rischio di morte nel DT1 : Metanalisi

Risk of all-cause mortality and vascular events in women versus men with type 1 diabetes: a systematic review and meta-analysis

Lancet Diabetes Endocrinol 2015; 3: 198–206

Rachel R Huxley, Sanne A E Peters, Gita D Mishra, Mark Woodward



	Studies	Individuals	Events	Ratio of SMR (95% CI)	p value	I^2	I^2 p value
Coronary heart disease[10,12,27,31,39,40,44]	7	59 383	1427	2·54 (1·80–3·60)	<0·0001	67·86%	0·33
Stroke[12,16,26,39]	4	45 677	371	1·37 (1·03–1·81)	0·0308	0·00%	0·01
Cardiovascular disease[10,12,17,21,28,33,39,40,42]	9	75 983	2166	1·86 (1·62–2·15)	<0·0001	2·39%	0·42
Renal disease[10,21,28]	3	30 332	142	1·44 (1·02–2·05)	0·0404	0·00%	0·60
Cancer[4,12,28,33,39]	4	31 018	119	1·23 (0·79–1·98)	0·32	0·00%	0·99
Accident and suicide[10,21,28,33,44]	6	36 320	260	1·34 (0·97–1·84)	0·073	0·00%	0·77

Figure 4: **Pooled women-to-men ratios of SMRs for incident coronary heart disease and stroke, and for mortality from cardiovascular disease, renal disease, cancer, and accident and suicide**

Two studies[12,17] reported the sex-specific age-adjusted hazard ratio (and variance) for coronary heart disease, stroke, and cardiovascular disease events in patients with type 1 diabetes compared with individuals who were free from previous cardiovascular disease; therefore the ratios of the hazard ratios (women:men) were obtained and included in the summary estimate. SMR=standardised mortality ratio.

Mortalità per tutte le cause nelle Donne con DT1 : + 40%

E nel DT1 ?

Annali 2018 vs 2011

PLOS ONE

RESEARCH ARTICLE

Gender-Disparities in Adults with Type 1 Diabetes: More Than a Quality of Care Issue. A Cross-Sectional Observational Study from the AMD Annals Initiative

Valeria Manicardi[1☯], Giuseppina Russo[2☯], Angela Napoli[3☯], Elisabetta Torlone[4☯], Patrizia Li Volsi[5☯], Carlo Bruno Giorda[6☯], Nicoletta Musacchio[7☯], Antonio Nicolucci[8☯], Concetta Suraci[9☯], Giuseppe Lucisano[8☯], Maria Chiara Rossi[8☯*], AMD Annals Study Group[¶]

INDICATORI di ESITO INTERMEDIO	Donne	Uomini
Soggetti con HbA1c ≤ 7,0%	25,3	30,8
Soggetti con HbA1c ≥ 8,0%	39,4	34,4
Soggetti con colest.LDL < 100 mg/dl	49,4	49,4
Soggetti con colest.LDL ≥ 130 mg/dl	16,4	17,2
Soggetti con PA ≥ 140/90 mmHg	24,3	30,7
Soggetti con BMI ≥ 30 Kg/m²	13,0	11,8
Soggetti con micro/macroalb (%)	23,0	28,7
Soggetti con eGFR <60 mg/dl*1.73 m² (%)	8,3	6,7
Soggetti fumatori (%)	21,6	30,1

F-M: - 5
F-M: +5

F-M: + 6

Differenze M-F

A target :
M: 1 su 3
F: 1 su 4

DT1 e tipo di terapia: Annali 2018

MDI

	Femmine	Maschi	p-value
N	11030	13925	
HbA1c media	8.0±1.4	7.8±1.3	<0.0001
HbA1c > 8%	40,8	35,2	<0.0001
HbA1c <=7%	24,2	30,3	<0.0001
			0,66

CSII

	Femmine	Maschi	p-value
N	2018	1565	
HbA1c media	7.6±1.1	7.5±1.1	<0.0001
HbA1c > 8%	31,4	27	0,005
HbA1c <=7%	30,9	35,5	0,004
Score Q	28.5±8.3	28.0±8.1	0,04

Score Q medio - 2016

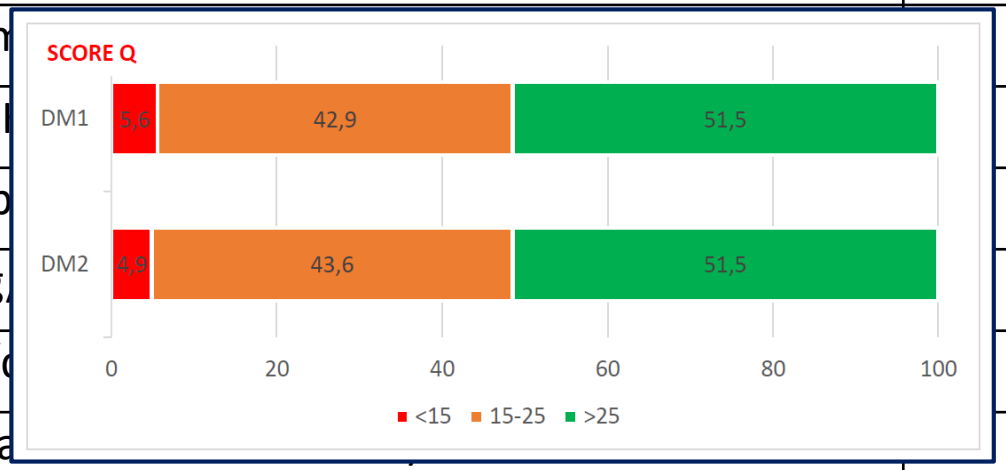
	Uomini	Donne	p
MDI	26.7±8.4	26.7±8.6	0,66
CSII	28.5±8.3	28.0±8.1	**0,04**

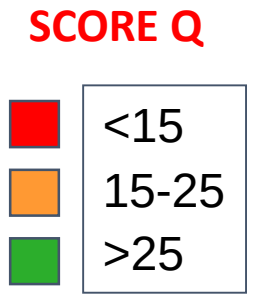
MDI: 1 donna su 4 è a target per HbA1c
CSII : 1 donna su 3 è a target .

Lo Score Q – che correla con il rischio CV - migliora in modo significativo nelle Donne trattate con CSII rispetto a quelle trattate con MDI

SCORE Q – Qualità di cura complessiva
Correla con il rischio CV

Indicatori di qualità della cura	Punteggio
Valutazione dell'HbA1c < 1 volta/anno	5
HbA1c >= 8.0%	0
HbA1c < 8.0%	10
Valutazione della pressione arteriosa < 1 volta/anno	5
PA >= 140/90 mm	0
PA < 140/90 mmH	10
Valutazione del p	5
LDL-C >= 130 mg/	0
LDL-C < 130 mg/c	10
Valutazione dell'a	5
Non trattamento con ACE-I e/o ARBs in presenza di MA	0
Trattamento con ACE-I e/o ARBs in presenza di MA oppure MA assente	10
Score range	**0 – 40**





PA = pressione arteriosa; PL = profilo lipidico; MA = microalbuminuria

Conclusioni -1

I dati Italiani dimostrano che nel diabete ci sono differenze di genere a sfavore delle donne:

DT2:

- **Le Donne sono più Obese, hanno un peggior controllo metabolico e Lipidico**

Quindi un **peggiore profilo di rischio Cardiovascolare**

Non sono sottotrattate con le terapie per i FdR CV, ma hanno esiti peggiori

DT1

- **le donne hanno un peggior controllo metabolico, gli uomini della PA**

Le cose che non conosciamo :

- **Ci sono differenze biologiche /genetiche ?**
- **Maggiori resistenze ai farmaci ?**

Ma anche

- **Minore aderenza alle terapie ?**
- **Stili di vita peggiori (meno attività fisica ?)**
- **Diversi ruoli sociali che influenzano questi risultati ?**

Conclusioni -2

Occorre

- Riorientare la ricerca farmacologica e clinica in ottica di genere
- Aumentare la sensibilità e la conoscenza dei medici italiani sulle differenze per migliorare la qualità della cura in base al genere
- Insegnare alle donne a prendersi cura di sé

Quali strategie mettere in campo per colmare il gap ?

GRAZIE dell'attenzione!