Gender Based Medicine 2013
Quo Vadis?

A (personal) viewpoint from the
International Society for Gender Medicine

Padova- October, 2013

Marek Glezerman, MD
Professor of Obstetrics and Gynecology
Rabin Medical Center and Tel Aviv University - Israel
Member Societies:
Austria (ÖGGSM)
Germany (DGesGM)
Israel (IsraGem)
Italy (THW)
Italy (Centro Studi Nazionale su Salute e Medicina di Genere)
Japan (Japanese Society for Gender Medicine)
Sweden (Swedish National Society for Gender Medicine)
USA (Partnership for Gender Specific Medicine)

Members: ~ 720
Board Members, IGM

President, Treasurer: M. Glezerman, Israel

Regular members:
- G Baggio, Italy
- A Kautzky-Willer, Austria
- MJ Legato, USA
- MG Modena, Italy
- K Schenck-Gustafsson, Sweden
- V Regitz-Zagrosek, Germany

Associate members:
- V Miller, USA
- H Shimokawa, Japan

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OBJECTIVES of IGM

...bringing together scientists and clinicians...
...implement gender in the curriculum...
...promote gender-specific public health ...
...facilitate interdisciplinary ...
...improve health and health care ...
...cooperate ...
...support the creation of professional organizations...
...support international cooperation...
...organize international meetings ...
...publish position papers ...
Putting gender on the agenda

Biomedical research continues to use many more male subjects than females in both animal studies and human clinical trials.
Inclusion, Analysis, and Reporting of Sex and Race/Ethnicity in Clinical Trials: Have We Made Progress?

Stacie E. Geller, Ph.D.,1 Abby Koch, M.A.,1 Beth Pelletieri, M.P.H.,1 and Molly Carnes, M.D., M.S.2

Studies

<table>
<thead>
<tr>
<th>Analysis by sex provided or sex included in model</th>
<th>2004</th>
</tr>
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<tbody>
<tr>
<td>Did not analyze by sex but provided explanation</td>
<td>9 (20)</td>
</tr>
<tr>
<td>Did not include sex in analysis or did not provide an explanation or both</td>
<td>31 (67)</td>
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<td>Total</td>
<td>46 (100)</td>
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</table>
What is (or should be) GBM?

- A new science?
- A new medical discipline?
- A new category in medical disciplines?
- A hub for all medical disciplines?

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Teaching (Universities and everywhere)

- Core curriculum
- Workshops
- Inter-disciplinary teaching
- Graduate studies
  - (physicians, nurses, psychologists etc)
- Postgraduate studies
- Integration in board exams
- Draw on international resources
Formidable Changes……..

- Physiology and Pathophysiology
- Diagnosis
  - Diagnostic tools
- Treatment
- Follow up

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Where are we today?

+ High quality centers world wide
+ Solid research produced
- Too little interaction between centers
- Too few national societies

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Have we been sufficiently convincing?

Public?
Universities?
Regulators?
Industry?
Do we move at an adequate pace?
Have we sufficiently joined forces?
Tasks
Raising Awareness

- Ministries of Health
- HMOs
- Universities
- Industry
- Media
- Educational institutions
- Public

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Public

Media - Media - Media
- TV
- Radio
- Interviews
- Articles
- Workshops for the public

GOAL: Create grassroots movement

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WHY MEN DON'T LISTEN
and
WOMEN CAN'T READ MAPS
How We're Different and What to Do About It
BARBARA AND ALLAN PEASE
Authors of Why Men Don't Have a Clue and Women Don't Have a Chance

The Female Brain
Louann Brizendine, M.D.

why men never remember
and
women never forget
MARIANNE J. LEGATO, MD, FACP
FOUNDER OF THE PARTNERSHIP FOR CANCER SPECIFIC MEDICINE
AND AUTHOR OF IT'S NOT JUST YOUR GENETICS, IT'S YOU!
WITH LAURA TUCKER
1976
Sex Differences
Social and Biological Perspectives

2001
Exploring the Biological Contributions to Human Health
Does Sex Matter?

Handbook of Clinical Gender Medicine
Edited by
Karger
Sex/Gender Differences
Pubmed 1994-2012

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What is GBM research?

- Basic Science
- Translational research
- Clinical studies (prospective and retrospective)
- Epidemiological
- Comparison between sexes
- Pathologies with unequal distribution
- Different expressions of disease
- Including cell sex info in research
- Sex specific pathologies: Outside GBM

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The End of an Era:
The Final Chapter of Gender Medicine

The Contribution of Low Serum Testosterone Levels to Mortality in Men

Sex and Life Expectancy

Perinatal Maternal and Neonatal Outcomes in Women With Gestational Diabetes Mellitus According to Fetal Sex

Evaluation of Metabolic Risk in Prepubertal Girls Versus Boys

Sex Differences in Physical Activity

Does Sex Affect the Incubity in Staphylococcus Aureus Bacteremia?

Gender Differences in Latin-American Patients With Rheumatoid Arthritis

A Sex- and Gender-Based Analysis of Allostatic Load and Physical Complaints

Sex Differences in the Biomechanics and Contractility of Intramural Coronary Arteries in Angiotsin II-Induced Hypertension

Low Testosterone Concentrations in Men Contribute to the Gender Gap in Cardiovascular Morbidity and Mortality
EUGIM - EUGENMED

European Curriculum in Gender-Medicine
European Curriculum in Gender Medicine

- France
- Germany
- Israel
- Italy
- Netherlands
- Spain
- Sweden
- United Kingdom

Financed by EU

Workshops
- Biomedical research
- Clinical Sciences
- Prevention
- Basic Research
- Health Care and regulations

Roadmap for European GM

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<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
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<tbody>
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<td>Austria</td>
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<td>Belgium</td>
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<td>France</td>
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<td>Germany</td>
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<td>Netherlands</td>
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<td>South Africa</td>
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<tr>
<td>UK</td>
<td>2</td>
</tr>
<tr>
<td>USA</td>
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</tbody>
</table>

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**EU Research Projects**

**EUGENMED**

**European Gender Medicine Network**

*From* 2013-10-01 to 2015-09-30 | [EUGENMED website](#)

Research addressing sex and gender (S&G) in biomedical sciences and health care research is emerging as a novel and highly promising field. Interaction of S&G related mechanisms leads to different manifestation of frequent diseases such as infarction, heart failure, diabetes, rheumatic disease, etc. in women and men. Research in this area will lead to novel, better targeted and therefore more effi...

**Project details**

- **Project reference:** 602050
- **Status:** Accepted
- **Total cost:** EUR 538 282
- **EU contribution:** EUR 496 000

- **Programme acronym:** FP7-HEALTH
- **Subprogramme area:** HEALTH.2013.4.1-4
- **Contract type:** Support actions

**Coordinator**

CHARITE - UNIVERSITAETSMEDELIN BERLIN
Different Drugs/Preparations for Men and Women?
Pharmacokinetics - LADME

- Liberation
- Absorption
- Distribution
- Metabolism
- Elimination

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Drug Therapy for Hypertension

- **ACE Inhibitors**
  - **Women**: More Side effects, less effective

- **Aspirin**
  - **Women**: More effective in stroke prevention
  - **Men**: More effective in MI prevention

- **Digitalis**
  - More reported deaths in women

- **β-blockers**
  - More effective in men
  - More torsade de pointes in women

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1997-2001
10 prescription drugs withdrawn
GAO 01-286 R Drugs withdrawn from Market

- 8/10 posed greater health risk for women than for men
  - 4/8 because more prescribed to women
  - 4/8 equally prescribed to men and women
- 2/8 not clear predominant risk

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Opium Receptors

Morphine: Women more sensitive

Pentazocin (Talwin)

Better in…

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- Antihistamines
- Erythromycin
- Antimalarials
- Antiarrhythmics (quinidine)

Drugs may induce “torsade des pointes”
Few reports on pharmacokinetics of drugs...

**MEN**
- Higher clearance of:
  - Doxorubicin
  - Epirubicine
  - Gemcitabine
  - Aspirin
  - Paracetamol

**WOMEN**
- Higher clearance of:
  - Prednisone
  - Methylprednisolone

Half-life:
- Men: 2.6 hrs
- Women: 1.7 hrs

Antiemetics: Less effective in women

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Medical Industry

- Pharmacology research
- Drug companies
- Medical industry

Jan., 2013

AMBIEN: F.D.A. approved a 3.5 milligram pill for men, and a 1.75 milligram pill for women.
(My view) of the Future of GBM

- GBM is not a new discipline like pediatrics
- No different medical disciplines for men and women
- GBM is science, a discipline and interdisciplinary enrichment
- Intra-department subdisciplines
- All medicine will be evidence based and gender based
- University curriculum changes
- Residencies will change

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Gender and Sex-Specific Medicine

Change of Paradigms

Re-Thinking Physiology and Pathophysiology

Re-Doing Research

Re-Writing Textbooks
7th International Congress for Gender and Sex Specific Medicine

igm-congress.com

November 10-12, 2014, Tel Aviv, Israel
Thank You

www.isogem.com