

**Cost-effectiveness of health interventions in older individuals with multimorbidity and polypharmacy:
the European MPI_AGE Project**



**Geriatrische Versorgungsverbände: 3. EVR Forum
18.03.2015, Ruhr-Universität Bochum**

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Die geriatrische Medizin

Geriatric ist die medizinische Spezialdisziplin, die sich mit physischen, psychischen, funktionellen und sozialen Aspekten bei der medizinischen Betreuung älterer Menschen befasst. Dazu gehört die Behandlung alter Patienten bei akuten Erkrankungen, chronischen Erkrankungen, präventiver Zielsetzung, (früh-)rehabilitativen Fragestellungen und speziellen, auch palliativen Fragestellungen am Lebensende



Die geriatrische Medizin

Diese Gruppe älterer Patienten weist eine hohe Vulnerabilität (“Frailty”) auf und leidet an multiplen aktiven Krankheiten. Sie ist deshalb auf eine umfassende Betreuung angewiesen

Praktische Arbeit mit geriatrischen Patienten:

- Beachtung der Multimorbidität
- Chronizität
- Bedeutung der Krankheitsfolgen (Störungen der Mobilität, Störungen der Aktivitäten des täglichen Lebens, Störungen der Kommunikation, Probleme der Krankheitsverarbeitung – Coping -)
- Verflechtung der medizinischen mit den sozialen Problemen
- Personalisierte Medizin



Die geriatrische Medizin

Ausgewählte Voraussetzungen für die geriatrische frührehabilitative Komplexbehandlung:

- Geriatrische Einheit
- **Erhebung des geriatrischen Assessments**
- Wöchentliche Teambesprechungen (Dokumentation, Behandlungsziele)
- Pflege durch besonders geschultes Pflegepersonal
- Mind. Eine Pflegefachkraft mit geriatricspezifischen Zusatzqualifikation
- Behandlung durch mindestens 2 Therapeutengruppen
- Behandlungsdauer spez. Geriatrische frührehabilitative Komplexbehandlung



Die geriatrische Medizin

Erhebung des geriatrischen Assessments

- Test zur Selbsthilfefähigkeit zu Beginn der Behandlung und vor Entlassung
- Mobilitätstest zu Beginn der Behandlung und vor Entlassung
- Kognitionstest zu Beginn der Behandlung
- Erfassung der Emotion zu Beginn der Behandlung
- Soziales Assessment in strukturierter Form in mind. 5 Bereichen (soziales Umfeld, Wohnumfeld, häusliche/außerhäusliche Aktivitäten, Pflege-/Hilfsmittelbedarf, rechtliche Verfügungen)

The Central Role of Prognosis in Clinical Decision Making

Because of competing chronic conditions and diminished life expectancy, careful consideration of prognosis is particularly important for clinical decision making in older patients.

Aligning the metric used to assess prognosis with recommendations in clinical guidelines would likely facilitate clinical decision making.

We need for validated indices that predict mortality for older persons rigorously assessed for generalizability, accuracy and potential bias.



Development and Validation of a Multidimensional Prognostic Index for One-Year Mortality from Comprehensive Geriatric Assessment in Hospitalized Older Patients

Intramural Research
Program National Institute
on Aging
National Institutes of Health



- Activities of Daily Living (ADL)	6	items
- Instrumental Activities of Daily Living (IADL)	8	items
- Short Portable Mental Status Questionnaire (SPMSQ)	10	items
- Mini-Nutritional Assessment (MNA)	18	items
- Exton-Smith Scale	5	items
- Cumulative Illness Rating Scale_comorbidity (CIRS)	14	items
- Number of drugs	1	
- Social index	1	
TOTAL	63	items

M. P. I.

	Mild	Moderate	Severe
SCORE	0.18±0.09	0.48±0.09	0.77±0.08
RANGE	0.00-0.33	0.34-0.66	0.67-1.0



Journal of Gerontology: MEDICAL SCIENCES
 Cite journal as: J Gerontol A Biol Sci Med Sci
 2010, Vol. 65A, No. 3, 180-187
 doi:10.1093/geronb/gpl111

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 Advance Access publication on April 8, 2009

The Multidimensional Prognostic Index Predicts Short- and Long-Term Mortality in Hospitalized Geriatric Patients With Pneumonia

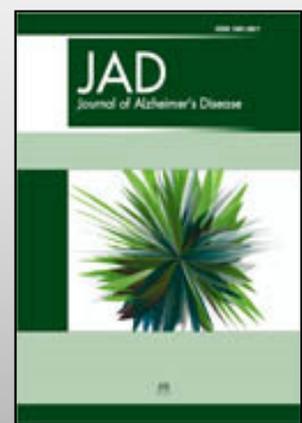
Alberto Pilotto,¹ Filomena Addante,¹ Luigi Ferrucci,² Gioacchino Leandro,³ Grazia D'Onofrio,¹ Michele Corritore,¹ Valeria Niro,¹ Carlo Scarcelli,¹ Bruno Dallapiccola,^{4,5} and Marilisa Franceschi^{1,6}

Digestive Diseases

Dig Dis 2007;25:124-128
 DOI: 10.1159/000099476

Usefulness of the Comprehensive Geriatric Assessment in Older Patients with Upper Gastrointestinal Bleeding: A Two-Year Follow-Up Study

Alberto Pilotto^a Luigi Ferrucci^a Carlo Scarcelli^a Valeria Niro^a
 Francesco Di Mario^c Davide Seripa^a Angelo Andriulli^b Gioacchino Leandro^d
 Marilisa Franceschi^{a,c}



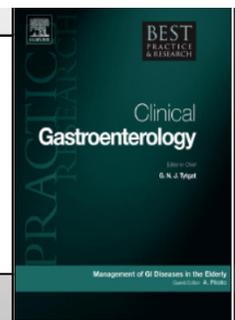
Journal of Alzheimer's Disease 18 (2009) 191-199
 DOI 10.3233/JAD-0901139
 191 Free

The Multidimensional Prognostic Index (MPI), Based on a Comprehensive Geriatric Assessment, Predicts Short- and Long-Term Mortality in Hospitalized Older Patients with Dementia

Alberto Pilotto^{a*}, Daniele Sancarlo^a, Francesco Panza^b, Francesco Paris^a, Grazia D'Onofrio^a,
 Leandro Cascavilla^a, Filomena Addante^a, Davide Seripa^a, Vincenzo Solfrizzi^b, Bruno Dallapiccola^a,
 Marilisa Franceschi^a and Luigi Ferrucci^a

The Comprehensive Geriatric Assessment and the multidimensional approach. A new look at the older patient with gastroenterological disorders

Alberto Pilotto, MD, Head of Department ^{a*}, Filomena Addante, MD, Assistant Physician ^a, Grazia D'Onofrio, PsyD, Research Fellow ^a, Daniele Sancarlo, MD, Research Fellow ^a, Luigi Ferrucci, MD, PhD, Director ^b



JOURNAL OF GERIATRIC ONCOLOGY 4 (2013) 208-217

Does the Multidimensional Prognostic Index (MPI), based on a Comprehensive Geriatric Assessment (CGA), predict mortality in cancer patients? Results of a prospective observational trial

Valter Giantin^a, Elisabetta Valentini^a, Mario Iasevoli^a, Cristina Falci^b, Paola Siviero^c,
 Elisabetta De Luca^{a,*}, Stefania Maggi^c, Bruno Martella^d, Graziella Orrù^a, Gaetano Crepaldi^c,
 Silvio Monfardini^e, Oreste Terranova^d, Enzo Manzato^a



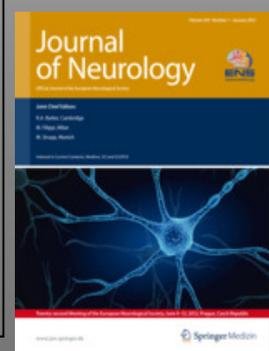
The Multidimensional Approach to the Older Patient with Chronic Kidney Disease

Alberto Pilotto, Daniele Sancarlo, Marilisa Franceschi, Massimiliano Copetti, Piero D'Ambrosio, Carlo Scarcelli, Luigi Ferrucci

A Multidimensional Prognostic Index (MPI) based on a comprehensive geriatric assessment predicts short- and long-term all-cause mortality in older hospitalized patients with transient ischemic attack

Daniele Sancarlo • Andrea Pilotto • Francesco Panza •
 Massimiliano Copetti • Maria Grazia Longo • Piero D'Ambrosio •
 Grazia D'Onofrio • Luigi Ferrucci • Alberto Pilotto

J Neurol 2012; 259 (4): 670-678



Circulation

Heart Failure

JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association 
 Learn and Live

Multidimensional Prognostic Index Based on a Comprehensive Geriatric Assessment Predicts Short-Term Mortality in Older Patients With Heart Failure

Alberto Pilotto, Filomena Addante, Marilisa Franceschi, Gioacchino Leandro, Giuseppe Rengo, Piero D'Ambrosio, Maria Grazia Longo, Franco Rengo, Fabio Pellegrini, Bruno Dallapiccola and Luigi Ferrucci

Circ Heart Fail 2010; 3: 14-20



Table 1. AUC Values of Predictive Tools Examined in More Than 1 Assessment

Predictive Tool, No.	AUC	Median	Range
AMIS model 2	0.86	(0.84-0.87)	0.84-0.87
APACHE II 19	0.77	(0.71-0.81)	0.69-0.94
BCLC score 2	0.85	(0.84-0.86)	0.84-0.86
BISAP score 2	0.82	(NA)	0.82-0.82
BNP 3	0.66	(0.62-0.67)	0.62-0.67
CLIP score 5	0.82	(0.81-0.83)	0.81-0.83
CRIB II 2	0.82	(0.81-0.83)	0.81-0.83

Only 40% (15) of the AUC values were higher than 0.80 (very good discrimination), and only 10% (3) were higher than 0.90 (excellent discrimination).

Simple risk index 2	0.80	(0.78-0.82)	0.78-0.82
TIMI risk score 5	0.73	(0.71-0.75)	0.71-0.75
TIMI risk score laboratory	0.77	(0.75-0.79)	0.75-0.79
TNM 2	0.80	(NA)	0.80-0.80
TRISS 2	0.75	(0.64-0.85)	0.64-0.85
Tokyo score 2	0.87	(0.86-0.87)	0.86-0.87



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 Fundación Para la Investigación
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 France

Univerzita Karlova v. Praze. Prague,
 Czech Republic

Collaborating partners (No EU funding)

Istitution	City, country
Veneto Region Social-Health Relationships Services	Venice, Italy
Veneto Region Coordinator Center for the Management of European Projects (CReMPE)	Verona, Italy
National Research Council of Italy (CNR) Institute of Neuroscience	Padova, Italy
Research and Clinical Care Institute (IRCCS) “Casa Sollievo della Sofferenza”	San Giovanni Rotondo, Italy
Mario Negri Sud Research Institute	Santa Maria Imbaro (CH), Italy

Collaborating partners (No EU funding)

Institution	City, Country
Johns Hopkins Bloomberg School of Public Health	Baltimore, USA
Estonian Association of Gerontology and Geriatrics	Tartu, Estonia
AGE Platform Europe aisbl	Brussels, Belgium
Semmelweis University Medical School	Budapest, Hungary
European Regional and Local Health Authorities (EUREGHA)	Brussels, Belgium
National Institute of Aging Intramural Research Program/NIH	Baltimore, USA
Flinders University of South Australia	Adelaide, Australia
Bulgarian Association on Ageing	Sofia, Bulgaria

Work Packages

Work Package 1

Coordination

Leader:

Azienda ULSS 16

Padova, Italy

Work Package 2

Dissemination

Leader:

EUGMS

Vienna (Secretariat)

Work Package 3

Evaluation

Leader:

KÖLN University

Köln, Germany

Work Package 4

Use of predictive rules in clinical decision making in community-dwelling older people

Leader:

Erasmus Medical Center

Rotterdam,
The Netherlands

Work Package 5

Using MPI to improve cost-effectiveness of drug treatments in older persons with multimorbidity and polypharmacy

Leader:

Karolinska Inst.
Stockholm
Sweden

Work Package 6

Using MPI to improve resource allocation in hospitalized older persons

Leader:

ULSS 16
Padova
Italy

Work Package 7

Dissemination

Leader:

SERMAS
Madrid
Spain



**The European MPI_AGE Project:
an appropriate approach to the frail older patients with multimorbidity**

**A Pilotto on behalf of MPI_AGE Project Investigators
28° Congresso Nazionale Società Italiana Geriatria Ospedale e Territorio
Rome, May 15-17, 2014**

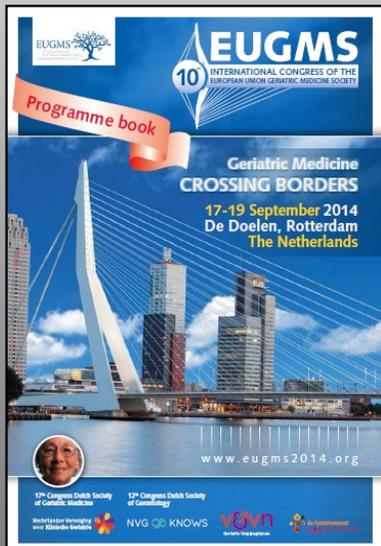
Using Multidimensional Prognostic Indices (MPI) to improve cost-effectiveness of interventions in multimorbid frail older persons: Aims and Design of the EU-funded MPI_AGE Project *

*Maria Cristina Polidori et al. on behalf of MPI_AGE Project Investigators.
National Congress of the German Geriatric Society – Halle, September 24-27, 2014*

Statin treatment reduces mortality in older patients with cardio- and cerebrovascular disease regardless of their mortality risk. Results of the EU-funded MPI_AGE Project.

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Geriatrics Unit, Azienda ULSS 16 Padova, Italy

^ Department of Medicine, Geriatric Clinic, University of Helsinki, Finland



Using Multidimensional Prognostic Index (MPI) based on Health Care System Database to predict one-year all-cause mortality of subjects recently admitted to Nursing Home: results of the EU-funded MPI_AGE project.

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Download "MPI-calculate" software
<http://www.ulss16.padova.it/geriatria/>

available "for free"



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on AppStore

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Special Interest Group
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Geriatric Assessment
www.eugms.org



Vielen Dank