

**Effect of OMT on reducing length
of stay in a population of pre-term
infants: a randomized controlled
trial (RCT) study.**

Emiliano La Mola D.O.

**AIOT Research Institute
Pescara, Italy**

emilianolamola@gmail.com

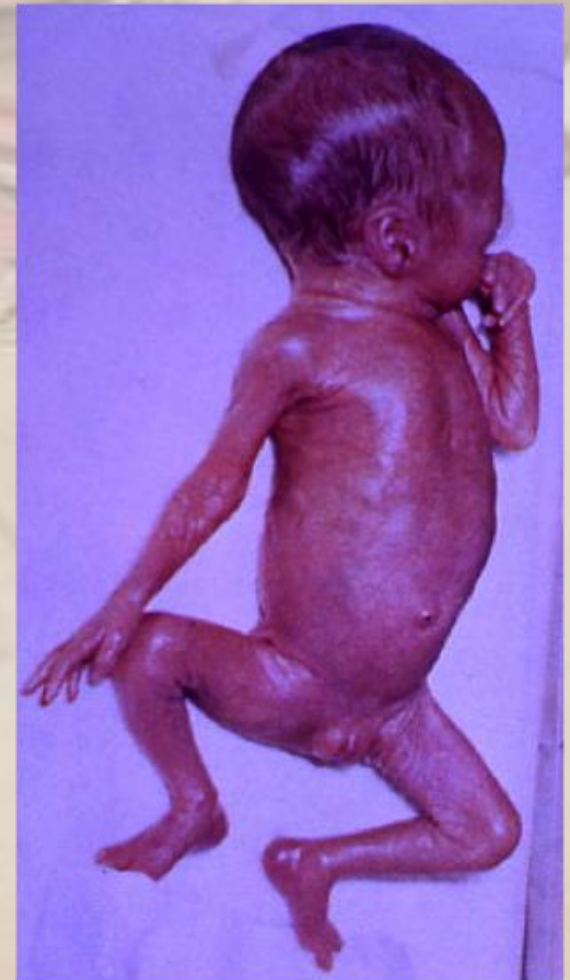
INTERNATIONAL CONGRESS OF OSTEOPATHIC MEDICINE
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Introduction

Newborns' classification

Term infants

Pre-Term infant



Introduction

Important health problem

Rate worldwide in 2005

12.9 million births

9.6% of all births, were
preterm.

Beck S, Wojdyla D, Say L et al **The worldwide incidence of preterm birth: a systematic review of maternal mortality and morbidity.** Bull World Health Organ. 2010 Jan;88(1):31-8

Introduction

Pre-term costs and hospitalization

- **USA Study**

\$5.8 billion = costs for preterm/low birth weight admissions,

47%

of the costs for all infant hospitalizations

27%

for all pediatric stays.

Introduction

OMT and newborns

- Lack of osteopathic studies

Introduction

CAM and pre-terms

- CAM (i.e. massage) seems to be related to a decrease of LOS

Field T, Diego M, Hernandez-Reif M. **Preterm infant massage therapy research: a review.** Infant Behav Dev. 2010 Apr;33(2):115-24.

BUT

- No formal evidence to support

Vickers A, Ohlsson A, Lacy JB, Horsley A. **Massage for promoting growth and development of preterm and/or low birth-weight infants.** Cochrane Database Syst Rev. 2004;(2):CD000390.

Aim of the study

- Evaluate the efficacy of OMT in reducing LOS and modifying weight gain in a population of preterm infants.

Materials & Methods

Study design

- Randomized control trial
- Outcomes:
 - **PRIMARY:** study-control group mean difference in **LOS**
 - **SECONDARY:** study-control group mean difference in **weight gain**
- Study period: 20 months
- OMT 2/week

Materials & Methods

Study population

220 newborns



101 enrolled

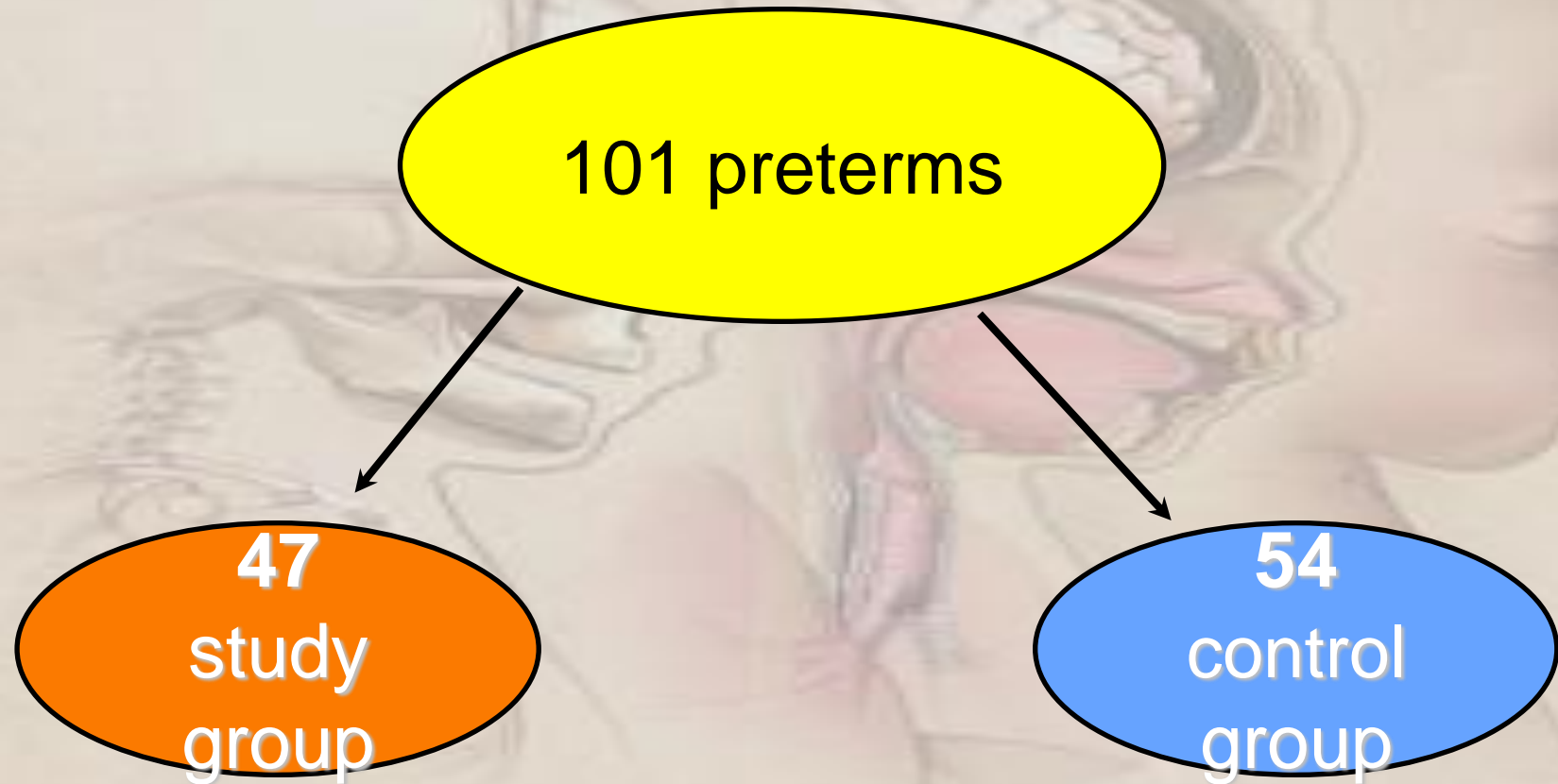
Materials & Methods

Exclusion criteria

- gestational age <29, >37 weeks;
- osteopathic treatment performed >14 days after birth;
- newborn transferred to/from other hospital;
- newborn from to HIV seropositive and/or drug addict mother;
- newborn with genetic disorders, congenital abnormalities, cardiovascular abnormalities, neurological disorders, proven or suspected necrotizing enterocolitis with or without gastrointestinal perforation, proven or suspected abdominal obstruction, pre- and/or post- Surgery patients, pneumoperitoneum and/or atelectasis.

Materials & Methods

Randomization



Materials & Methods

Type of treatment

101 preterms

47
study
group

Standard medical care
Osteopathic evaluation
OMT

54
control
group

Standard medical care
Osteopathic evaluation

Materials & Methods

Osteopathic Treatment

Indirect and fluidic techniques

- indirect myofascial;
- v-spread;
- balanced membranous tension;
- balanced ligamentous tension.

Statistical analysis

- Arithmetic means and SD for the general characteristics of study population;
- Univariate statistical tests for all differences between study and control group;
- Multivariate linear regression for OMT on outcomes
- $\alpha = 0.05$
- R statistical program
- R Development Core Team (2009). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-90051-07-0, URL <http://www.R-project.org>.

Results

Baseline

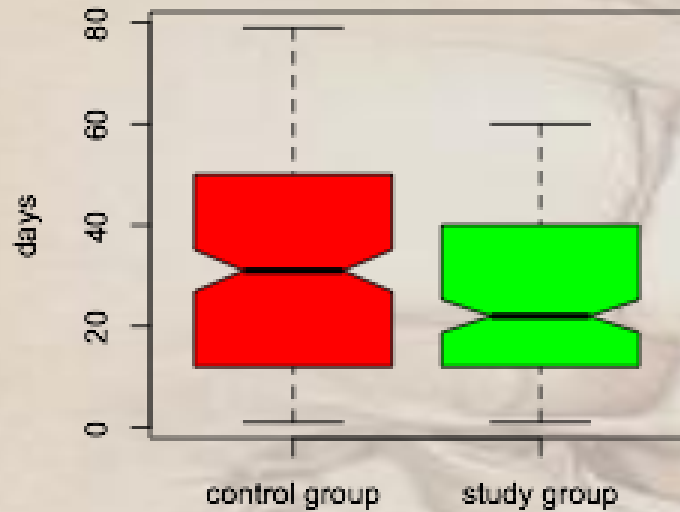
	Study group	Control group	p value
N*	47 (46.5)	54 (53.5)	
Gender			
Male	24 (51.1)	27 (50.0)	0,92
Female	23 (49.8)	27 (50.0)	
Gestational Age			
Overall	34.1 (2.4)	34.1 (2.5)	
> 32*	36 (76.6)	39 (72.2)	0,79
≤ 32	11 (23.4)	15 (27.8)	
Weight (gr)			
At birth	2088 (498.6)	2234 (730.9)	0,24
≤ 1500*	7 (14.9)	10 (18.5)	0,26
> 1500*	40 (85.1)	44 (81.5)	
At recovery	1893 (496.7)	1926 (713.8)	0,59

Numbers in table are mean±s.d.; p value from t test

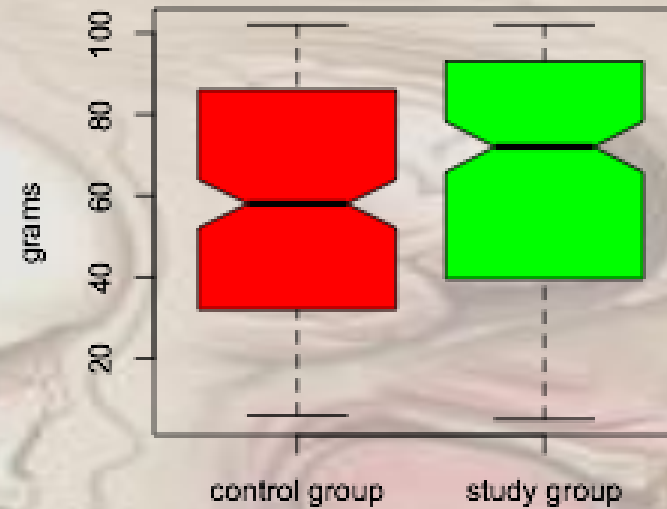
*n(%);p value from χ^2 test

Results

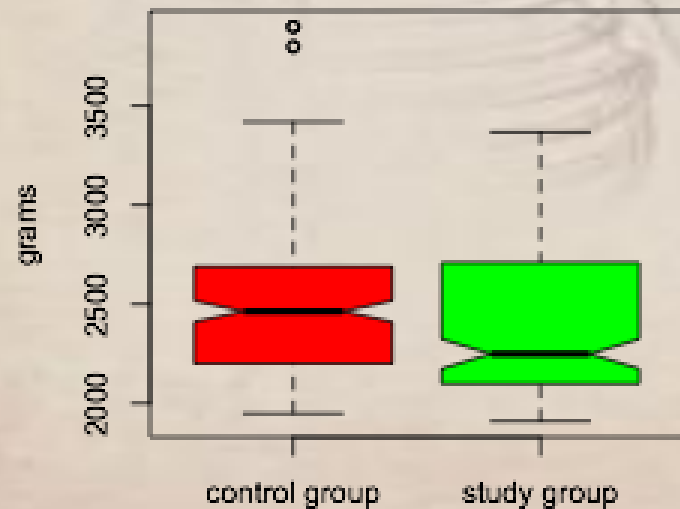
LOS



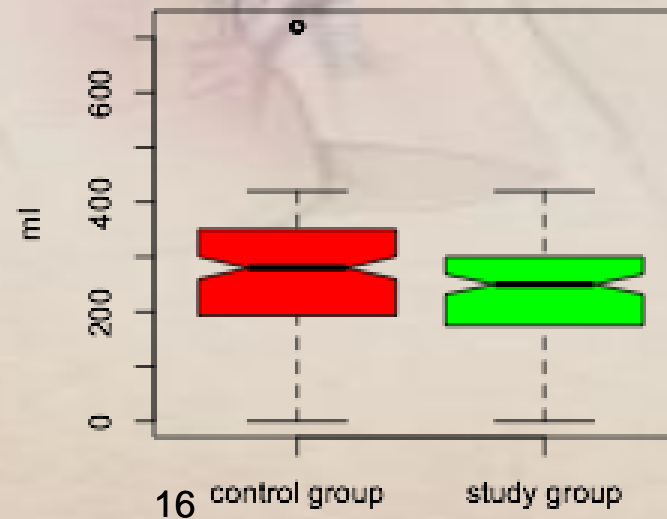
Weight per Day



Weight at discharge



Milk per day

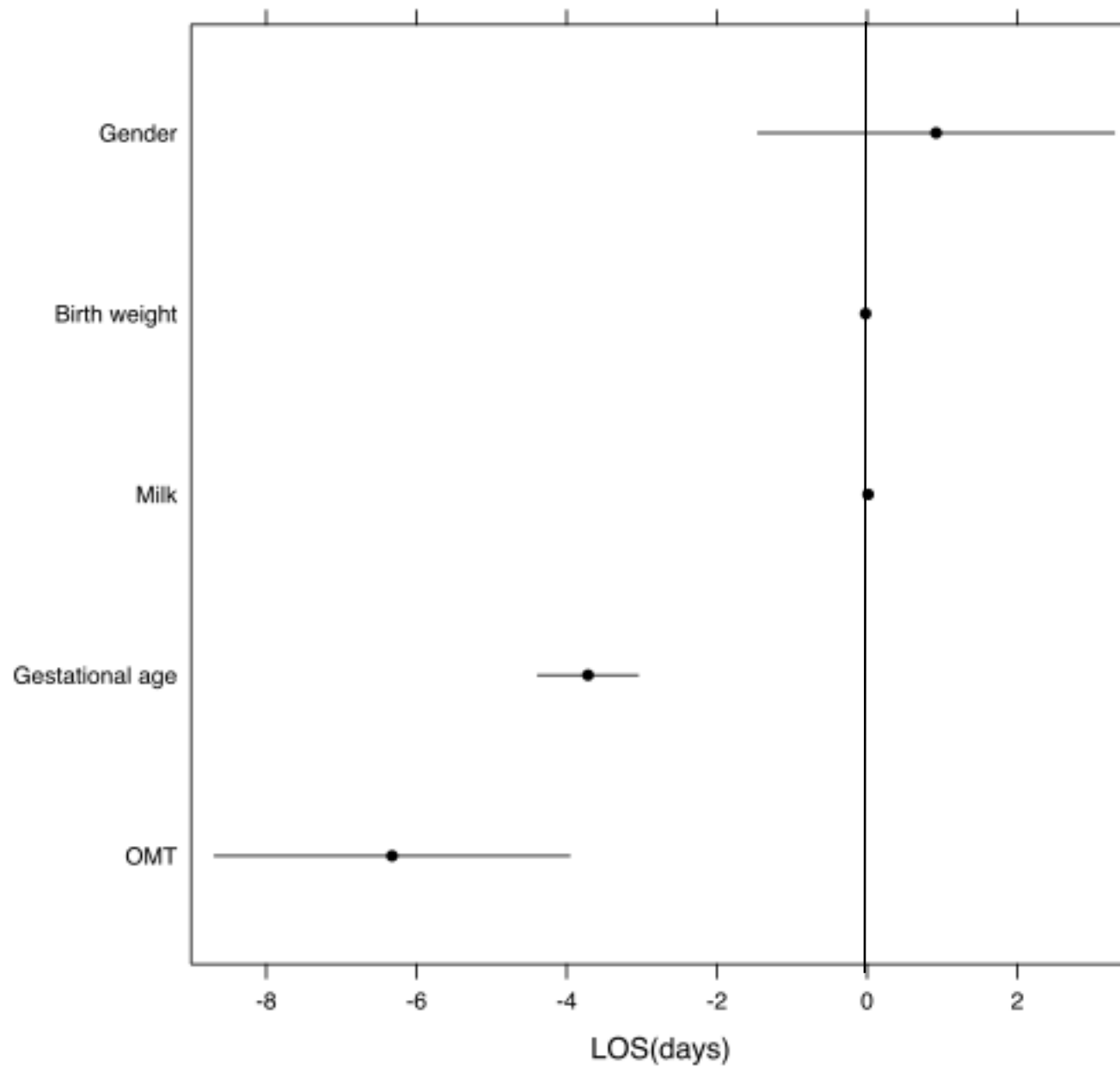


Results

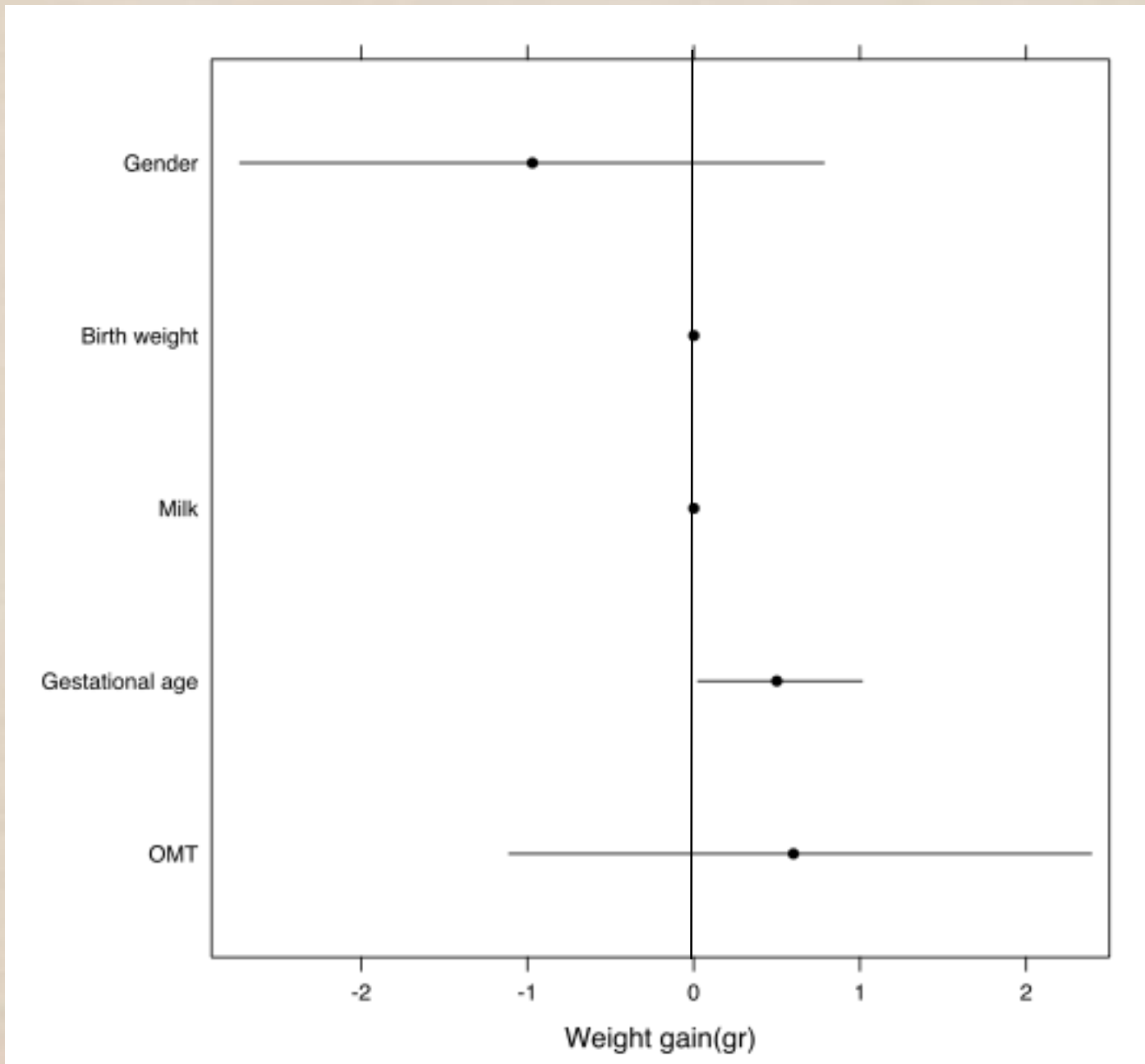
Multivariate Linear Regression

	LOS (d)				Weight gain (gr)			
	β	95%c.i.		$p>\chi^2$	β	95%c.i.		$p>\chi^2$
gender	0,919	-1,450	3,288	0,44	-0,097	-2,728	0,782	0,28
Birth weight (gr)	-0,021	-0,023	-0,018	<u>0,001</u>	0,001	-0,006	0,008	0,89
Gestational Age (w)	-3,716	-4,380	0,023	<u>0,01</u>	0,05	0,027	1,012	<u>0,04</u>
Milk at admission (ml)	0,014	0,004	-3,052	<u>0,001</u>	0,001	0,003	0,007	<u>0,001</u>
OMT	-6,326	-8,687	-3,962	<u><0,001</u>	0,06	-1,109	2,391	0,47

Results - LOS



Results - WG



Discussion

- OMT and infants: possible role in several fields

Hayden C, Mullinger B. **A preliminary assessment of the impact of cranial osteopathy for the relief of infantile colic.** Complement Ther Clin Pract. 2006 May;12(2):83-90.

Vandenplas Y, Denayer E, Vandenbossche T, et al. **Osteopathy may decrease obstructive apnea in infants: a pilot study.** Osteopath Med Prim Care. 2008 Jul 19;2:8.

Philippi H, Faldum A, Schleupen A, et al. **Infantile postural asymmetry and osteopathic treatment: a randomized therapeutic trial.** Dev Med Child Neurol. 2006 Jan;48(1):5-9.

Conclusion

- The present study shows that OMT is independently associated to a statistical significant reduction in LOS in a population of pre-term infants.

***Dott. Cozzolino Vincenzo D.O., Dott.ssa Barlafante Gina D.O.,
Cerritelli Francesco D.O., Ciardelli Francesco D.O.***



Emiliano La Mola D.O.

AIOT Research Institute

Pescara, Italy

emilianolamola@gmail.com