FAT CONTENT OF HUMAN MILK:PILOT STUDY FROM LATVIA

Liva Aumeistere[1,3], Inga Ciprovica[1], Dace Zavadska[2], Juris Andersons[3], Elina Jakubone[3]

[1] Latvia University of Agriculture, [2] Riga Stradins University,
[3] Institute of Food Safety, Animal Health and Environment BIOR, Latvia

Introduction

- Fat is the most energy-dense macronutrient found in human milk, providing vital calories for growth and development of a baby
- Variation in fat content can be due to factors like length of lactation, feeding frequency, the stage of nursing process, baby's gender and birth weight, etc.
- Human milk composition among lactating women in Latvia is not sufficiently studied

Aim

to determine fat content in mature human milk and factors affecting it.

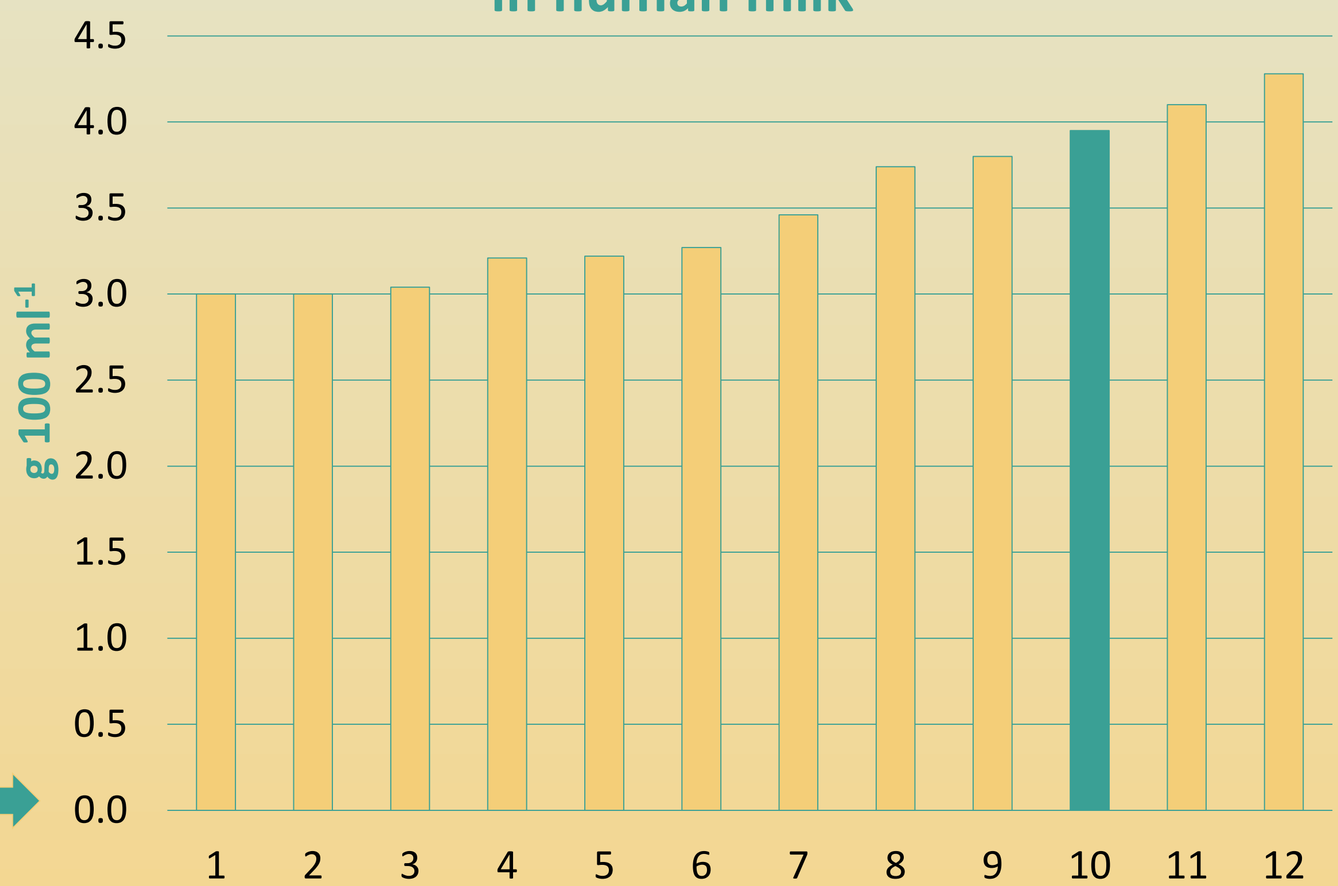
Materials and Methods

- Study approved by Riga Stradins University Ethic Committee (No. 4/28.7.2016.)
- Research conducted from **November 2016 to April 2017**
- **Thirty three** pooled 24 h mature breast milk samples obtained from mothers whose babies had reached the age of at least two months
- Fat content determined by **ISO 2446:2008**
- Participants – 33 mothers with singleton deliveries of **16 male and 17 female babies**, **23 to 39 years old** with an average Body Mass Index (BMI) **22.03±2.81**
- **Primiparas** – 45% of participants
- Babies' birth weight ranging from **1.60 to 5.36 kg**, height from **42 to 61 cm**
- Mothers for sampling using **breast pump** (64%), **expression by hand** (21%) or **combination of both methods** (15%)
- 21 participants still **exclusively breastfeeding**, two practicing **partial breastfeeding** (breastfeeding+formula feeding), ten mothers started **weaning**

Results

- Fat content ranged from **1.90 to 5.80%**
- Obtained mean value (**3.95±1.02%**) was comparable to data from literature
- **No significant association** found with any of the above mentioned factors (mothers age and BMI, parity, baby's gender, birth weight and height, breastfeeding manner and milk expression method) ($p>0.05$)

Comparison of mean fat content in human milk



1 – Chang *et al.*, 2015; 2 – Grote *et al.*, 2016; 3 – Shi *et al.*, 2011; 4 – Saarela, Kokkonen & Koivisto, 2005; 5 – Wojcik *et al.*, 2009; 6 – Soliman, Soliman & Bakr, 2014; 7 – Yamawaki *et al.*, 2005; 8 – Mitoulas *et al.*, 2002; 9 – Quinn *et al.*, 2012; **10 – Current study**; 11 – Bauer & Gerss, 2011; 12 – Thakkar *et al.*, 2013

Conclusions

Our obtained mean result is comparable to data from literature. However, fat content varied among individuals and more samples need to be analyzed to clarify the influencing factors.

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