



Age and gender influence for glucoses concentration changes in the blood

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ABSTRACT

Introduction: Occurrence of illness of diabetes mellitus type II are still increasing all around the world.

Excercises: 1. To evaluate age and gender influence for glucoses concentration 2. To evaluate glucoses concentration changes in different conditions 3. To evaluate glucoses tolerance on both genders.

Methods: Totally 199 of twin pairs which was aged in 12-87 years range were used in our analysis. Glucose tolerance test was performed in Lithuanian University of Health Sciences, Endocrinology Clinics.

Research was approved by bioethics comitee and director of Twins center. Data was analysed using SPSS 13.0 statistics program.

Results: Totally 250 females and 148 males participated in research. The sample was divided in two groups: I – age less than 40 years, and II- group members aged over 40 years. Glucose tolerance test number 1 in comparison with Glucose tolerance test number 2 didn't statistically differed between both age groups: $p=0,068$.

Conclusions: According to our results age don't have influence for glucoses concentration.

AMŽIAUS IR LYTIES ĮTAKA GLIUKOZĖS KONCENTRACIJAI KRAUJYJE

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Įvadas

Sergančiųjų 2 tipo cukrinių diabetu bei gliukozės apykaitos sutrikimais skaičius didėja. Manoma, jog sergančiųjų 2 tipo cukriniu diabetu skaičius auga dėl viršsvorio, nutukimo, mažo fizinio aktyvumo, neracionalios mitybos bei populiacijos senėjimo. Beta ląstelių nepakankamumas išlieka pagrindinė cukrinio diabeto patogenetinė priežastis.(1)

Darbo tikslas

1. Įvertinti amžiaus ir lyties įtaką gliukozės koncentracijai kraujyje.
2. Nustatyti sąsajas tarp glikemijos nevalgius (GTM I taškas) ir glikemijos po gliukozės krūvio (GTM II taškas) rezultatų ir amžiaus.
3. Nustatyti sąsajas tarp glikemijos nevalgius (GTM I taškas) ir glikemijos po gliukozės krūvio (GTM II taškas) rezultatų ir lyties.

Darbo metodika

Tirti registruoti LSMU Mokslinio „Dvynių centro“ registre 12-87 m. dvyniai. Į tyrimą įtraukos 199 dvynių poros, kurioms buvo atliktas gliukozės tolerancijos mėginys (GTM). GTM buvo atlikti LSMUK endokrinologijos klinikoje: ryte nevalgiusiam ligoniui buvo paimtas veninis kraujas iš kurio nustatytas gliukozės kiekis (GTM I taškas). Po kraujo paėmimo duota išgerti 75 g gliukozės, ištirpintos 150 – 300 ml vandens. Praėjus 120 min. nuo gliukozės suvartojimo, paimtas veninis kraujas ir nustatytas gliukozės kiekis (GTM II taškas). Tyrimams atlikti buvo gauti bioetikos komisijos ir „Dvynių centro“ vadovo leidimai.

Gauti duomenys suvesti ir apdoroti naudojantis programiniu paketu SPSS 13.0. Ryšiams tarp vidurkių nustatyti buvo naudojamas Stjudento t testas. Statistinių hipotezių reikšmingumui vertinti buvo naudotas $p=0.05$ reikšmingumo lygmuo ($p<0,05$).

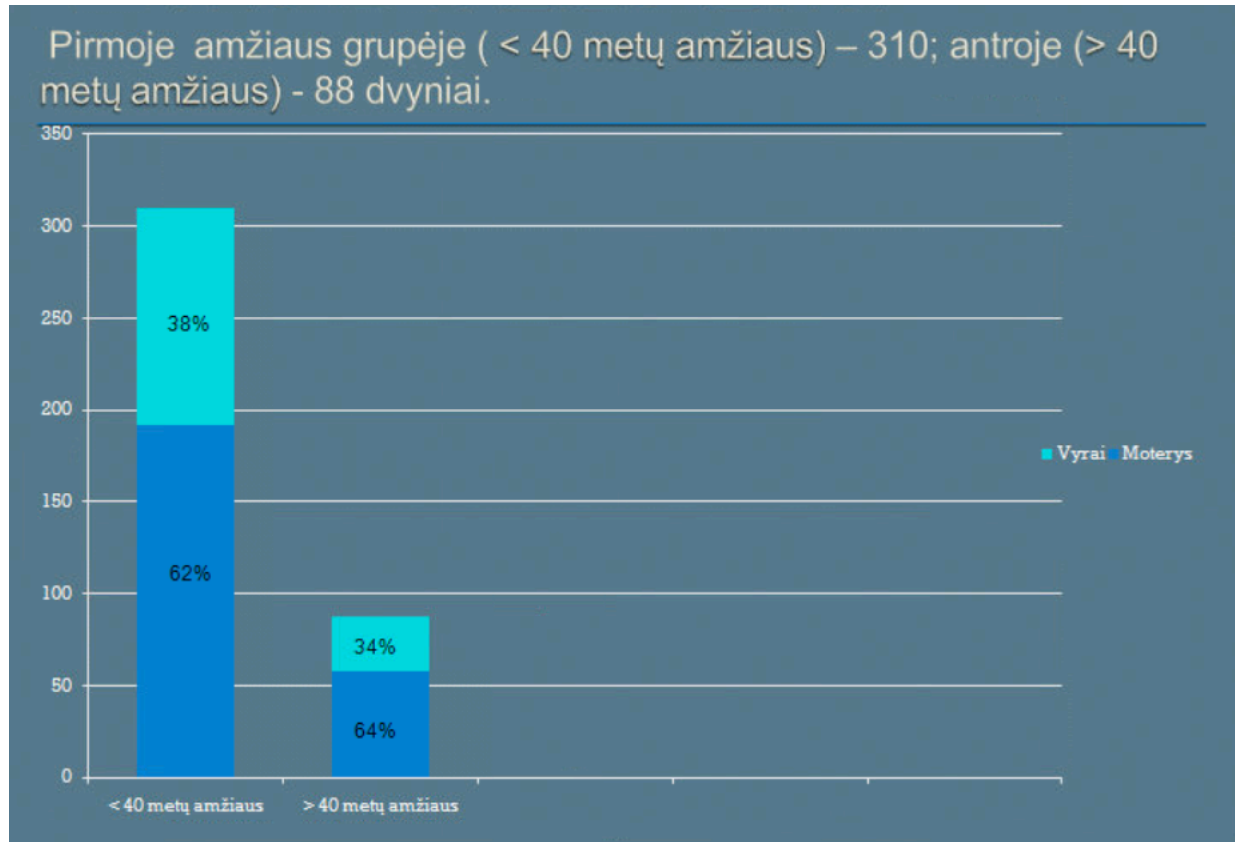
Rezultatai

Iš viso išanalizuota 199 dvynių porų GTM (398 dvyniai). Tyrime dalyvavo 250 moterų ir 148 vyrai. Tyrimo dalyviai

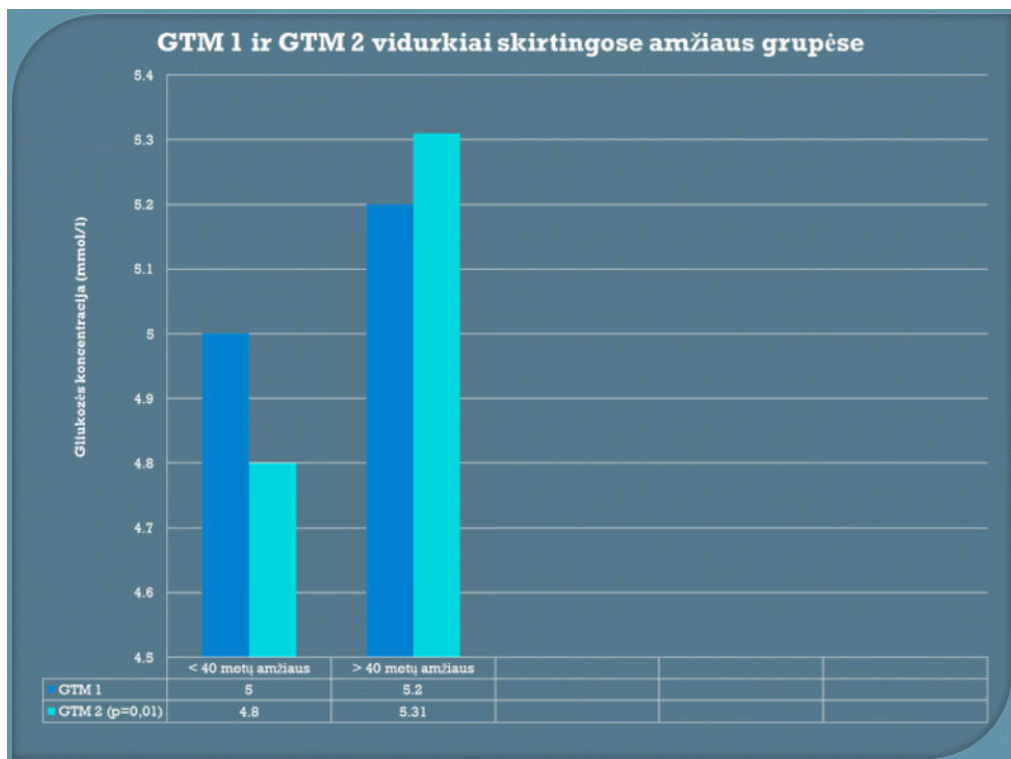
buvo suskirstyti į dvi amžiaus grupes: pirmą grupę – jaunesni nei 40 metų amžiaus, antrą grupę - 40 metų ir vyresni. Pirmoje grupėje 310, antroje - 88 dvyniai. Abiejuose amžiaus grupėse vyrų ir moterų santykis buvo panašus: pirmoje amžiaus grupėje buvo 118 vyrų ir 184 moterys, antroje amžiaus grupėje - 30 vyrų ir 58 moterys. Lyginant pagal amžių: GTM I taško vidurkis - pirmos amžiaus grupės (jaunesnių nei 40 metų) 5 mmol/l, antros (40 metų ir vyresnių dvynių) - 5,2 mmol ($p=0,068$) – statistiškai reikšmingo skirtumo nerasta. GTM II taško vidurkis: pirmos grupės – 4,8 mmol/l, antros - 5,31 mmol/l ($p=0,01$) – statistiškai reikšminga. Lyginant pagal lytį: moterų GTM I taško vidurkis 4,94 mmol/l, vyrų - 5,22 mmol/l ($p=0,02$) – statistiškai reikšminga, moterų GTM II taško vidurkis 4,94 mmol/l, vyrų - 4,87 mmol/l ($p=0,62$) - statistiškai reikšmingo skirtumo nerasta.

Išvados

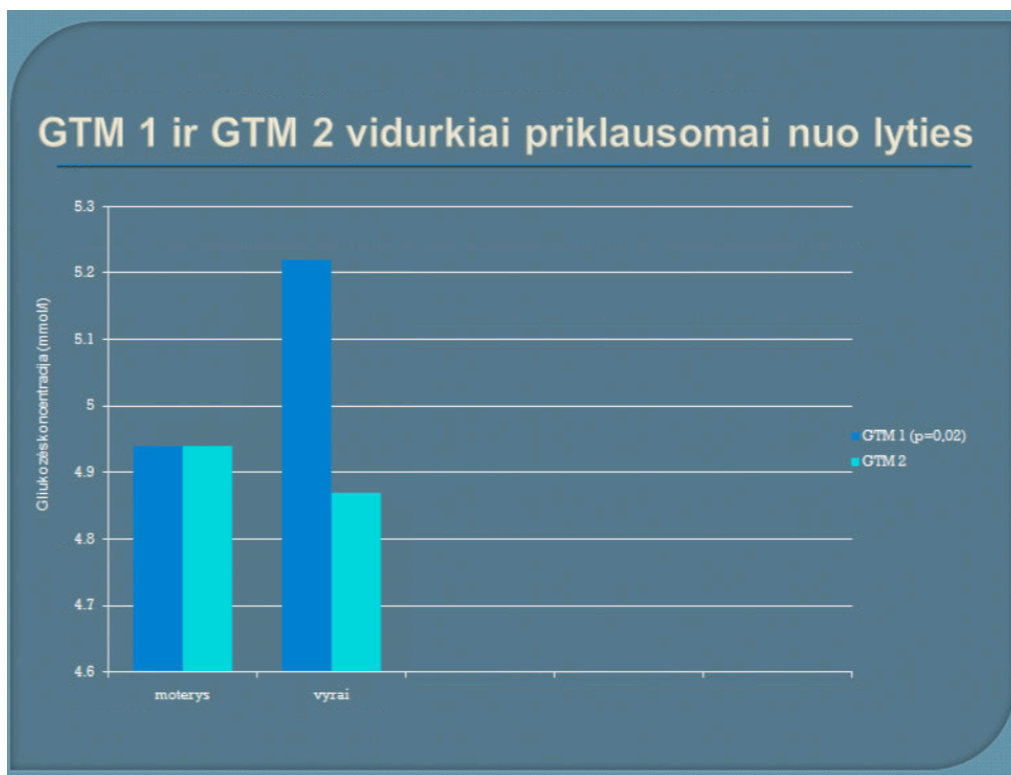
Statistiškai reikšmingo skirtumo tarp abiejų amžiaus grupių, lyginant gliukozės koncentraciją nevalgius, nerasta. Gliukozės koncentracija kraujyje po 75 g gliukozės krūvio statistiškai reikšmingai didesnė antroje amžiaus grupėje (40 metų ir vyresnių) lyginant su pirmąja (jaunesnių nei 40 metų). Gliukozės koncentracija nevalgius (GTM I taškas) statistiškai reikšmingai didesnė vyrų grupėje lyginant su moterimis. Statistiškai reikšmingo skirtumo lyginant gliukozės koncentraciją po 75 g gliukozės krūvio (GTM II taškas) tarp lyčių nerasta. Greičiausiai skirtumus tarp lyčių GTM I taško labiausiai nulėmė, kad vyrai nesilaikė metodikos ir prieš paimant kraują buvo pavalgę (GTM I taško vidurkis vyrų grupėje didesnis nei GTM II taško vidurkis).



1 pav. Dvynių pasiskirstymas pagal amžiaus grupes.



2.pav. Gliukozės tolerancijos testų rezultatų testų palyginimas skirtingose amžiaus grupėse.



3pav. Gliukozės tolerancijos mėginių rezultatai priklausomai nuo lyties

Diskusija

Ankstyvas gliukozės koncentracijos sutrikimų nustatymas atliekant GTM, ir savalaikis gydymas gali reikšmingai sumažinti kardiovaskulinių ligų dažnį, tuo tarpu gliukozės apykaitos sutrikimai siejami su daugeliu ligų ir faktorių(2-55) Miokardo krūvio tolerancijos sumažėjimas yra siejama su gliukozės apykaitos sutrikimais.(56)Nauji molekuliniai, genetiniai tyrimai rodo, kad gliukozės koncentracija gali būti reguliuojama per genų raišką.(57)

Padėka

Norėtume padėkoti mokslo vadovei doc. Irenai Andriuškevičiūtei už konsultacijas mokslinio tyrimo metu.

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