

Case Study Detecting Venous Blood Glucose in Relaxed Activity in one NAF Tube, and in three NAF Tube for After Anaerob Run Activity

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ABSTRACT

Ordinary cane (OC) is beverage natural used famously in the world. It is also used in research for athlete after badminton sport¹) to look the effects in blood glucose detection in sports laboratory or for mice after being fed with cane juice of cavitated and probed, its cane juice treated crude palm oil floating of transducer²) was making more active. Sonicated by the liquid floating transducer to kill the microbe^{3,4}). The in vivo research from healthy of amateur athlete Venous blood samples in leisure activities contained in NaF-1 tube and venous blood samples after Anaerobic run divided into 3 tubes: NaF-2, NaF-3 blood sample mixed by cane juice, NaF-4 blood sample mixed by OC after float Crude Palm Oils transducer (Tr. FCPO) 3 hours, where it's exposed after dipped the piezoelectric⁵) (DP) 3 hours. The specific criteria in this research are: a. Anaerobic running in the sports field, b. Taking random venous samples between leisure and post-anaerobic activities, c. Carrying NaF tube from the sports field to Laboratory, d. detecting blood glucose from NaF tube. The results that turn out is 3 slope positive of blood glucose levels for: NaF-2, NaF-3, and NaF-4, there's increases to in NaF-1, and if the blood glucose values of NaF-3 and NaF-4 are higher than NaF-2, then m is also positive. While another athlete (name's Geo) is the negative slope of blood glucose values at NaF-4 of NaF-1, where called Geo cases. The solution to Geo's case he is possibility pre-diabetes or cholesterol.

Keywords: Anaerobic run, Sport field, Blood glucose levels, Cane juice, Cane juice cavitation, Floated CPO transducer.

INTRODUCTION

Sugarcane juice (*Saccharum Offcinarum* Linn – Latin, Ordinary Cane Juice) has been known throughout the world as a refreshing drink and has been famous since ancient times⁶), there is an effect after drinking OC on the fitness of badminton athletes¹), however OC has a lot of bacteria⁷), the OC that will be researched and developed is associated with: 1. Physics associated ultrasonic cavitation: That water is compact molecule, but there can be broken down by dipped Tr. Piezoelectric (Tr. DP)⁵) as decomposer from H₂O of OC into H_x, H₂, O_x, or O₂, 2. Anaerobic bacteria of OC can dyed after exposure Tr. DP, 3. Aerobic and anaerobic bacteria of OC can dyed after exposure Floated Tr. CPO, that CPO after ultrasonic radiated by Tr. 12 knobs at 3 hours and after floated Tr. CPO (FCPO) was block contact between OC with the air, after that aerobic bacteria of OC was dyed or Tr. FVCO continue vibrated in their of oils groups. 4. The Tr. FCPO that nonstable moved cavitation, and after exposure OC at 3 hour made OC sterile (all

bacteria and fungi dyed⁸), 5. The detection of microbial bacteria of OC death or grown by pour plate method in medium of Nutrient Agar (NA), while mushroom death or grown by pour plate method in medium Sabouraud Dextrose Agar (SDA) and some antibiotic⁹), 6. The Research & Development (R&D) by in vitro research that takes because the CPO media was dangerous (Europe opinion, 2020) and OC was more microbials⁴), so the in vitro research was taken. 7 The detection Blood glucose levels i.e.: •The 3 mL sampling venous blood after anaerobic run was mixed by 0,01 mL the OC or 0,01 mL the OC after cavitation by Tr. FCPO, 8. The detect reacted by with component of blood samples about glucose level and cholesterol level, 9. Sports activity results by in vivo as

activity aerobic run of amateur athletes are healthy or obesity, where the R&D by blood produces excess reaction by lactic acid, pyruvic acid, carbonic acid, and other, at O_x, O₂, H_x, H₂ and others with OC cavitation ultrasonic. 10. Chemist reaction in this research when blood samples are mixed with OC (regular/treated) at closed metabolic and waste after running anaerobically in a Sodium Fluoride (NaF) tube. 11. Clinical Chemistry gaps as the detection glucose level of venous blood samples: •In NaF-1 (in vivo), without run, •In NaF-2 (in vivo), after anaerobic run, •In NaF-3 (in vitro), after anaerobic run and mixed by OC and •In NaF-4 (in vitro), after anaerobic run and mixed by OC cavitation ultrasonic. 12. The mean age of athletes 20 – 22 years (in 2 girls and 2 man).

MATERIAL AND METHODS

The function generator tool for the Protek brand type VOM VFG 3020 DDS with the following criteria Signal: Sinusoid (selected), Square, triangle. Frequency: infrasonic, sonic and ultrasonic (selected by 48 kHz), Intensity range: 0 – 20 Vpp (selected by 5 Vpp), Voltage range: 0 – 10 Vdc (selected by 5 Vdc), Phase range: 0 – 90° (selected by 0°). Solution-immersed Piezoelectric speaker working concept: 2 polar DP poles were connected to the Function Generation probe in a magnification factor of 1x (selected), 10x, where the speed of sound in air is 349.29 m/s at room temperature⁹), which is not similarly, if dipped Piezoelectric (DP) immersed in CPO 3 hours, after this Tr. CPO be floated in 10 mL Ordinary Cane (OC), it made water of Cane break up molecule water in the test tube for 3 hours, as like phenomenon Tr. DP expose directly in OC, it made the pH of the OC increase very strongly (= 8.5)⁵). This speaker made in Taiwan, type 40 T

16B (modify of condenser), working temperature in –

30 ~ 80 °C, condenser diameter 1.0 cm and with plastic retaining 1.2 cm, condenser thickness 0.04 cm⁹). NaF vacutainer tube contains anticoagulant material inserted 3 mL of blood sample without clotting (with gentle shaking), so that blood can be transported (delayed process) to the laboratory to check glucose of venous blood sample. The test tube code from NaF-1 is 3 mL blood samples of relax activity, NaF-2 is 3 mL blood samples of after run activity without OC, NaF-3 is 3 mL blood samples of after run activity and mixed 0,01 mL OC, or NaF-4 is 3 mL blood samples of after run activity and mixed 0,01 mL OC ultrasonic cavitation. The instrument for measured glucose of blood samples with: The NaF tube criteria has a gray plastic screw cap that is used once, Tourniquet rope, Vacuum disposable syringe as a tool for taking venous blood in the arm that can work into the NaF tube, Centrifuge as a means of homogenizing blood samples and OC before measuring glucose of venous blood samples. Sugarcane juice (OC) has the original pH = 5, the density of the OC is

1.08 g/mL, the color of the new OC is dark green, the smell of OC is typical of sugarcane⁸). Preliminary research related to experimental animal activity: Mice when subjected to OC probe (treatment OC was cavitated by float Tr. FCPO where CPO had been radiated by Tr. 12 Knob for 3 hours²) which turned out to be more active than OC, or to drink only water, whereas when OC

stale, mice die³). This is the basis of research combined, in vitro group: mixing among blood and OC or mixing among blood and OC ultrasonic treatment versus in vivo group: the blood glucose level without mixing OC, but direct of venous blood sample from Amateur athletes. and description of the presence of slope m (positive or negative) in two activities about 1. Relaxing (in vivo) and: a. Anaerobic run (in vivo), b. Anaerobic run and mixed OC (in vitro), c. Anaerobic run and mixed with OC ultrasonic treatment (in vitro), it was cavitated by Tr. DP 3 hours⁵). 2. Anaerobic run in NaF-2 (in vivo) and: a. Blood sample after anaerobic run was mixed with OC in NaF-3 (in vitro), b. Anaerobic running and mixed with OC ultrasonic treatment in NaF-4 (in vitro). This response to the results of the initial research, as well as the assumption that CPO was harmful to health, so with this reason this research was done.

RESULT

The data The type of research glucose blood level of sample by in vivo group, is in code: a. NaF-1 blood samples while relaxing, b. NaF-2 blood samples after Anaerobic running, by in vitro group is in code: NaF-3 blood samples after Anaerobic run and mixed with OC, NaF-4 blood samples after Anaerobic run and mixed with OC after Piezoelectric of cavitation. The data are as follows:

Athlete	Blood Glucose Level in Vena Blood Sample (mg/dL)			
	NaF-1	NaF-2	NaF-3	NaF-4
GEO	91	167	474 (keto)	114
Riski	115	167	375 (keto)	340
Eka	110	259	446 (keto)	400
Niken	100	156	380 (keto)	302

Table: Athletic after eating, NaF-1: After relaxing,

NaF-2: After anaerobic run, NaF-3: After anaerobic run and mixing with OC, NaF-4: After anaerobic run and mixing with OC ultrasonic treatment.

The Research Analysis:

- i. Of the three healthy athletes the results of glucose blood level are: •In NaF-1 is smaller than NaF-2 and m is positive, •In NaF-2 is smaller than NaF-3 (the fact keton indicated) and m is positive, •In NaF-4 (datas for: Riski, Eka, Niken) is greater than their NaF-2 and the m is positive, but specifically the blood glucose level for GEO data in NaF-4 is smaller than NaF-2 and m is negative, its Geo cases.
- ii. From this result is differences, there is a case in GEO, where blood glucose Level in NaF-4 is below NaF-2 or m = negative, while three other amateur athletes (Riski, Eka, Niken) have blood glucose level above NaF-2 and m is positive, although all athlete that its NaF-4 is under NaF-3. In this Case meaning "GEO" is not likes sport activities and clarified in research which will come about special observation by obesity and diabetes militus or cholesterol.
- iii. Additional some pictures:



Pictures Definition: A. Installation of Tourniquit, B. Group of test tubes containing of blood sampling, blood sampling with OC or OC ultrasonic treatment and empty tube, C. NaF tube blood sampling after centrifugation, D. Blood glucosa level in NaF-3 after blood sample was mixed with OC (on behalf of GEO = 474 mg/dL), E. Blood glucosa level in NaF-4 after the blood sample was mixed with OC ultrasonic treatment (on behalf of Riski = 340 mg/dL), F. Blood glucosa level in NaF-4 after the blood sample was mixed with OC ultrasonic treatment (on behalf of Niken = 302 mg/dL)

DISCUSSION

There is a case of "GEO" whose solution to the problem is obtained from research data detected and the cause not known, namely: GEO is suspected to have early symptoms (pre) Diabetes. Discussion-1. The source of energy for anaerobic running (holding your breath) is cell fat, which distinguishes it from aerobic running (breathing) is glucose. Where the process differs: aerobic activity is the process of glycolysis in body cells as:

Monosaccharide + O₂ □ CO₂ + H₂O + Energy
 and metabolic waste in venous blood, while anaerobic activity is the process of hydrogenation in body cells as:
 simple fatty acids + H₂ □ C₃H₆O₃ + Energy
 and different metabolic wastes in venous blood¹⁰), so in NaF-4 has reaction among metabolic waste and O₂ or H₂ in OC ultrasonic treatment, Discussion-2, based on this

research is blood glucose level detection in vitro (ie: mixing blood samples with OC or OC ultrasonic treatment). The blood glucose level detection in healthy athletes after anaerobic running activities, as well as random detection, all of which the results were at same group in research blood glucose level namely: they both increased level of blood glucose even though from NaF-1 to NaF-2, that was very high level⁸⁾. The phenomenon of blood glucose level athlete in slope (m) positive among before activity badminton versus after activity badminton and drinking OC, that make fit and healthy¹⁾, That research has as same as blood level in NaF-2 (after run anaerobic) to level NaF-3 (after run anaerobic and mixed OC) was good detecting, and m positive too, but it has problem in NaF-4 was blood sample mixed OC cavitation ultrasonic special Geo Data's (case of Geo), what happened after that?. The blood sample after Anaerobic running and mixing OC or OC cavitation ultrasonic have a risk of blood glucose level was very low or threats in diabetic mellitus athlete and may be cholesterol athlete. Discussion-3: The Biochemical reactions the body of athletes in

this research blood glucose level in NaF-4 (other than "geo case") have m (slope) moderate between in NaF-4 (blood sample mixed with OC cavitation ultrasonic) and in NaF-2 (blood sample after run anaerobic). This reaction is a metabolic waste reaction after an anaerobic run, where the identical metabolic waste is lactic acid and other fatty acids or bases that can react in OC ultrasonic treatment with O₂ and H₂ (as ions reactive) in venous blood samples after anaerobic run, can be shape H₂O or alcohol as like:

n molecules C₃H₆O₃ (in Blood) + O₂ will be reactive become n molecules H₂O + C₃H₅O₃H₅C₃atau

n molecules C₃H₆O₃ (in Blood) + H-H will be reactive become alcohol

Discussion-4, Mathematic as in terms of athletic experiencing cases on behalf of GEO in a randomized sampling or not fasting way, when it will be m negative among NaF-2 to NaF-3 against NaF-2 to NaF-2 was indicate blood glucose level to down (very down). What change from slope (m) positive to slop negative that indicate Geo have some problem of blood glucose level no as same as like data of Riski, Eka and Niken. Discussion-5, the blood glucose detection in the Laboratory has some error as likes: a. Preanalytical form about sampling (process of blood sampling and transportation to laboratory from field sports), b. Analytical process about direct and delay processed in laboratory (with NaF Tube), c. Post analytical.

CONCLUSION

1. In NaF-3 (in vitro) all amateur athletic was higher blood glucose and keto acid value because glucose of OC is very different compared by body fat in blood sample
2. In NaF-4 (invitro) data in three Athlete (as Riski, Eka, Niken) is upper level in NaF-2, so them become as like sport activity.
3. The case of GEO occurred was detected decrease among Naf-2 to NaF-4 blood glucose level in this research so Geo not like sport activity.
4. The case of GEO in vitro research is indicated to also suffer is suspected of being obese and pre diabetes Miletus or cholesterol, which will be in vivo researched

and developed in future

Acknowledgements: This work was supported in part by the university state of Surabaya, discovery, research and innovation sport in activity of run anaerobic and detection blood glucose level by venous blood samples mixed some OC after cavitation by floated VCO transducer in 3 hours.

I said thank you to Prof. Drs. H. Toho Cholik Mutohir MA., Ph. D, as a promotor and examiner in closed at State University of Surabaya and Prof. Dr. Nining Widyah Kusnanik, Sp.D., M App Sc., as a co-promotor, examiner in closed at State University of Surabaya.

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