



11th Annual

ICHAMS

INTERNATIONAL CONFERENCE FOR HEALTHCARE AND
MEDICAL STUDENTS

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ICHAMS 2022 CONFERENCE SCHEDULE

Day 2: Friday, February 11, 2022.

8:30-10:30am: Registration

9am: Poster Session A

10am: Oral Session A

11am: Workshop A

In-Person: *Historic Tour, Point of Care Ultrasound, OBGYN Skills, Suturing Master Class*

Online: *ECG Skills (11am), Lamh Communication (12pm)*

1pm: Lunch Break

2pm: Oral Session B

3pm: Poster Session B

4pm: Workshop B

In-Person: *Intubation, Chest Drains, Suturing for Beginners 1*

Online: *Mental Health Ireland (4pm), Genomics (5pm)*

6pm: Mental Health Ireland Keynote

8pm: Cook Along Event

POSTER SESSION B

Friday, February 11, 2022 3:00pm-4:00pm

The Relationship Between Mean Corpuscular Volume and Vitamin B12 Level in a Canadian Population

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Introduction: Vitamin B12 (B12) is required by the body to synthesize red blood cells (RBC). B12 deficiency may lead to the development of megaloblastic anaemia, characterized by a decreased haemoglobin and increased mean corpuscular volume (MCV). This correlation is heavily emphasized in medical school curricula. However, reduced B12 level is not always correlated with increased MCV and vice versa. This may introduce issues when MCV is used as a diagnostic tool for B12 deficiency. This study aims to investigate the relationship between B12 deficiency and MCV in a Canadian cohort with asymptomatic B12 deficiency. **Methods:** Using electronic medical records patients with B12 deficiency (n=83) were selected, along with controls (n=53). B12 levels of these patients were compared to their MCV levels at the time of diagnosis. Ethical approval was obtained. The data was analysed in STATA using logistic regression. **Results:** The logistic regression model showed no significant association between MCV and B12 levels (OR:1.04, CI 0.98-1.12, p=0.175). **Discussion:** These results show that MCV levels are not a reliable indicator of B12 deficiency. The heavy emphasis on the relationship between B12 levels and MCV in medical school curriculum may lead to confusion among medical students. Some primary care facilities still use MCV to screen for B12 deficiency. This method is inaccurate and may delay diagnosis's, worsening patient outcomes. The relationship between MCV and B12 levels should continue to be a part of medical school curriculum, but students should be taught that elevated MCV is not a sensitive predictor of B12 deficiency.

The Way Bioinformatic Analysis Would Change The Diagnosis Of Maroteaux–Lamy Syndrome

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Background: The diagnosis of lysosomal storage disorders is primarily based on enzyme assay and hence it could be challenging in most of the cases. This problem is well-illustrated by Mucopolysaccharidosis Type VI also known as Maroteaux–Lamy syndrome, in which the breakdown of glycosaminoglycans is damaged due to the deficiency in the enzyme arylsulfatase B (ARSB) caused by homozygous or compound heterozygous mutation in the ARSB gene (5q14). Particularly, due to ARSB disfunction dermatan sulfate and chondroitin sulfate molecules easily build up in cellular lysosomes, resulting in multi-organ affection. **Objective:** The aim of our research is to ease the diagnosis of this rare autosomal recessive lysosomal storage disorder with the help of bioinformatic analysis. For this purpose, we are using a self-made program. **Methods:** Using the results of a targeted DNA sequencing, a specific analysis of the ARSB gene can be performed with the help of the application we designed. **Results:** The program written in C# is capable of recognizing the ARSB gene introduced in FASTA format and comparing it with the normal ARSB gene sequence, previously introduced. It can also determinate the exact positions and the type of nucleotides in which the introduced sequence differs from the normal one. In a further step the algorithm can transcribe the sequence of the introduced gene into mRNA, and even generate the structure of the protein encoded by this. **Conclusion:** Bioinformatic processing provides a reliable and fast solution for early screening of Maroteaux-Lamy syndrome, because it recognizes any gene mutation and the necessary genetic sampling can be done within the first week after birth. In conclusion, this modern and cheaper procedure may be used in the future widely for the screening of Mucopolysaccharidosis Type VI, making it a well-applicable method for the future of precision medicine.