

SERUM VITAMIN D IN SYSTEMIC LUPUS ERYTHEMATOSUS

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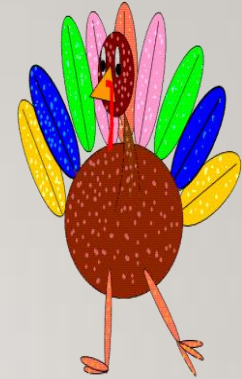
3 University of Medicine-1



CONTENTS

2

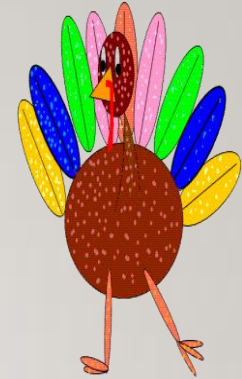
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

3

- **Introduction**
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



4 INTRODUCTION

- Systemic Lupus Erythematosus (SLE) is the prototypic multisystem autoimmune disorder with a broad spectrum of clinical presentations encompassing almost all organs and tissues¹.

5 INTRODUCTION (CONT:)

- Immune complex formation
- Complement activation
- Deposition of antibody-antigen complex ²

6



SLE admission to RD, YSH

7 INTRODUCTION (CONT:)

Vitamin D – an essential steroid hormone ³

8 INTRODUCTION

- Several hypotheses for the pathogenesis of Systemic Lupus Erythematosus

9 VITAMIN D AND SLE

- Discovery of the vitamin D receptor → downstream immune effects
- Overall immunologic effects ⁴

10 VITAMIN D LEVEL IN SLE

- Low levels of vitamin D have been hypothesized to be a risk factor for the development of rheumatic disorders and persistence of disease activity

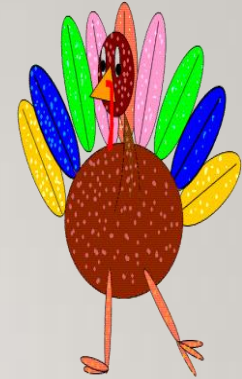
|| VITAMIN D LEVEL IN SLE

- A number of studies have revealed a high prevalence of vitamin D insufficiency and deficiency in patients with SLE
- Controversial – SLE activity and 25(OH)D3 level

CONTENTS

12

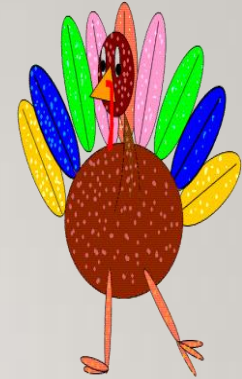
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

13

- Introduction
- **Aim and Objectives**
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



14 AIM

- To study the association between the serum vitamin D and disease activity of Systemic Lupus Erythematosus

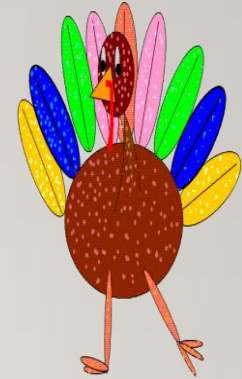
15 OBJECTIVES

1. To measure the serum 25-hydroxy vitamin D, complement C3, 24-hours urinary protein and disease activity score (SLEDAI) in Systemic Lupus Erythematosus
2. To find out the association between the serum 25-hydroxy vitamin D and disease activity of Systemic Lupus Erythematosus

CONTENTS

16

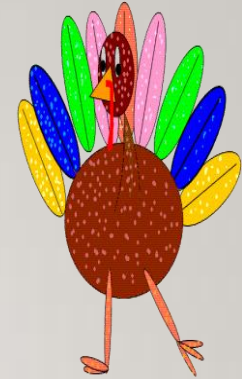
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

17

- Introduction
- Aim and Objectives
- **Research Hypothesis**
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



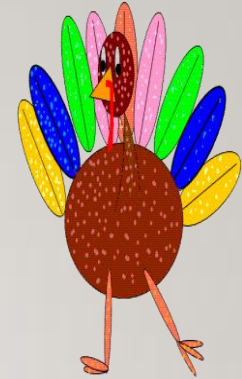
18 RESEARCH HYPOTHESIS

- Low vitamin D level is associated with high disease activity in Systemic Lupus Erythematosus

CONTENTS

19

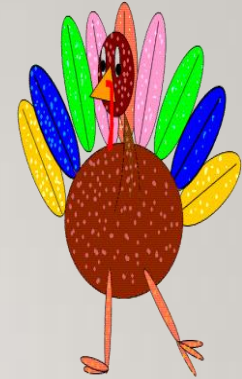
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

20

- Introduction
- Aim and Objectives
- Research Hypothesis
- **Methods and Procedures**
- Results and Discussion
- Conclusion
- Acknowledgements
- References



21 METHODS AND PROCEDURE

- Hospital based cross-sectional study
- SLE patients who were admitted to Rheumatology Department , Yangon Specialty Hospital (YSH) from January 2016 to October 2017

22 INCLUSION CRITERIA

1. SLE patients diagnosis by consultant physician or rheumatologist
2. Normal serum creatinine
3. Age above 18 years

23 EXCLUSION CRITERIA

1. Patient with the treatment of vitamin D
2. Patients with underlying chronic kidney disease (stage 3 CKD, eGFR below 60 ml/min) with the evidence of chronic liver disease
3. Persons with drug-induced lupus
4. Pregnant patients

24

- Ethical approval – The Ethical and Research Committee of University of Medicine-1
- Nominal / Ordinal data – Frequency, Percentage
- Interval / Ratio – Mean, Standard deviation
- Factors association – Pearson correlation

25 TEST FOR SERUM COMPLEMENT C3

- Immunoturbimetric assay at private laboratory
- (at before and after the aggressive treatment)

26 TEST FOR 24-HOURS URINARY PROTEIN

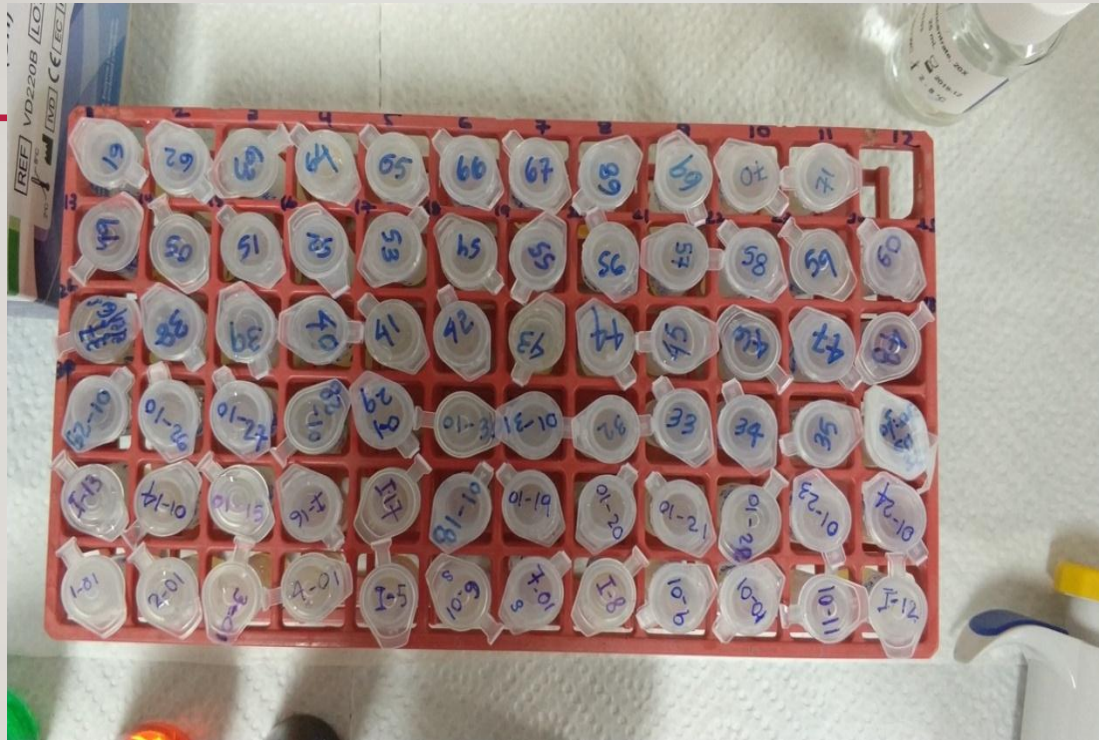
- Turbimetric method at private laboratory
- Cosbas c 311/501 analyzers on Roche/Hitachi Cobas c system
- (at before and after the aggressive treatment)

27 TEST FOR SERUM VITAMIN D

- Solid phase ELISA (25 (OH)D)
- Calbiotech 25(OH)D ELISA (VD220B)

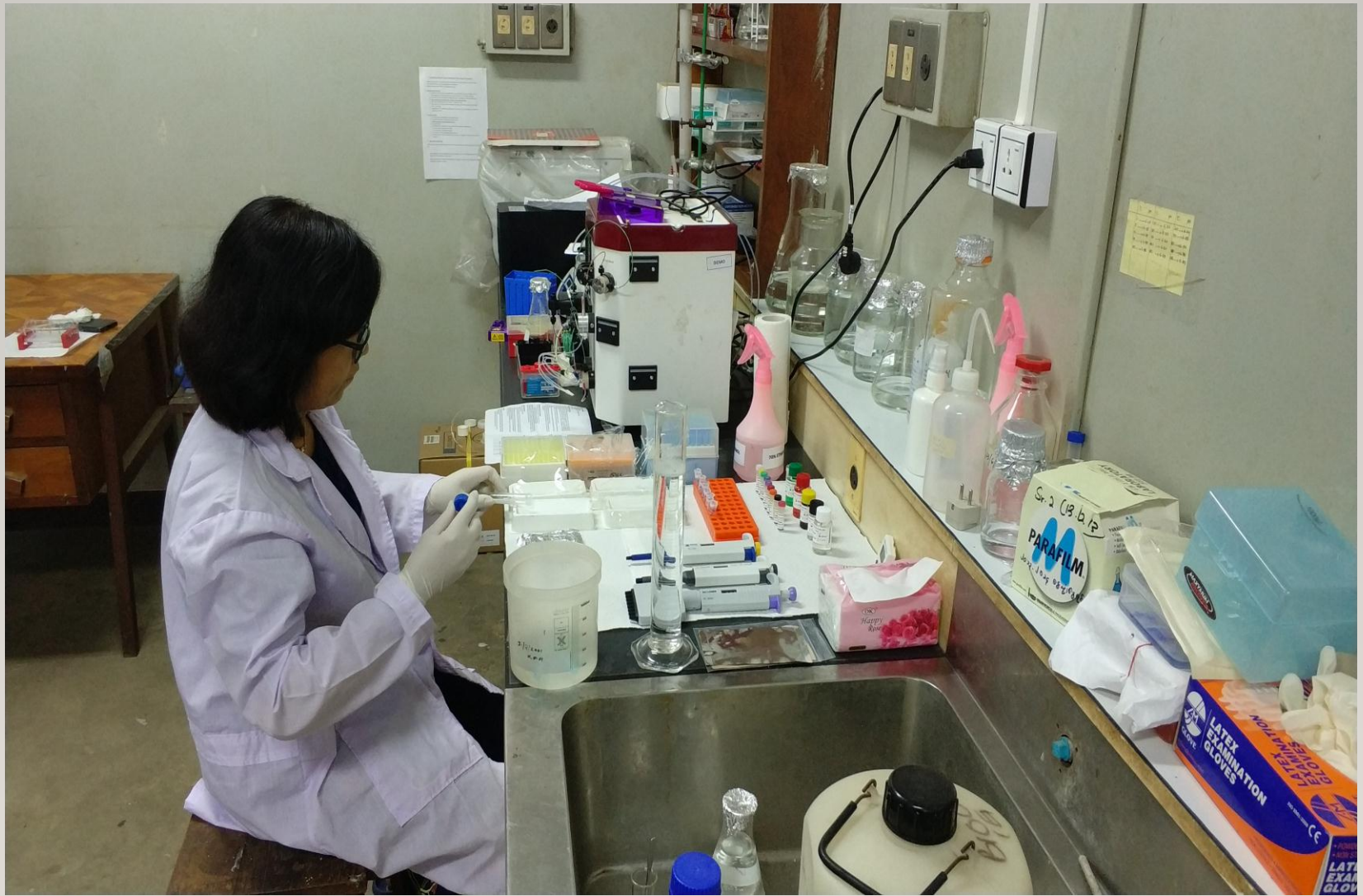


28



29





31



32 WORKING DEFINITION

- **SLE** = Using update 1997 of the 1982 American College of Rheumatology Revised Criteria



33 WORKING DEFINITION

- Disease activity – the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) ⁵

No Flare	≤ 3
Mild to moderate flare	3 - 12
Severe flare	> 12



SLE Disease Activity Measures

Features	Activity Score (Marks)	Features	Activity Scores (Marks)
Seizure	8	Arthritis	4
Psychosis	8	Myositis	4
Organic Brain Syn:	8	Urinary casts	4
Cranial N Disorder	8	Haematuria (>5 HPF)	4
Lupus Headache	8	Proteinuria	4
CVA	8	Pyuria (>WBC5 HPF)	4
Vasculitis	8	New Rash	2
Fever	1	Alopecia	2
Thrombocytopenia	1	Mucosal Ulcers	2
Leukopenia	1	Pleurisy	2
Total Score		Pericarditis	2

SLEDAI score

No Flare (≤3)	Mild or Moderate flare (3 - 12)	Severe Flare (>12)
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35 REFERENCE VALUES

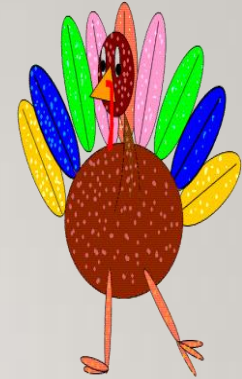
- Complement C3 0.9 – 1.8 g/l (private laboratory)
- Vitamin D deficiency ≤ 20 ng/ml (<50 nmol/l) ⁶
- Vitamin D insufficiency 21-29 ng/ml (51-75 nmol/l) ⁶
- Vitamin D Normal ≥ 30 ng/ml (≥ 75 nmol/l) ⁶
- 24-hours urinary protein <140 mg/day



CONTENTS

36

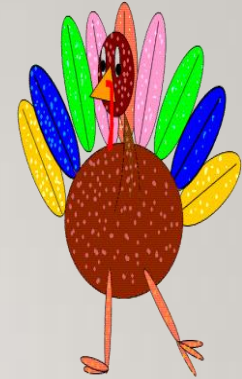
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

37

- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- **Results and Discussion**
- Conclusion
- Acknowledgements
- References



38 RESULTS

- A total of 87 patients with SLE

39

Table (1): Age distribution of the study group (n=87)

Age group (year)	Frequency	Percentage
18-20	23	26.4%
21-30	32	36.8%
31-40	25	28.7%
>40	7	8.0%
Total	87	100.0%

40

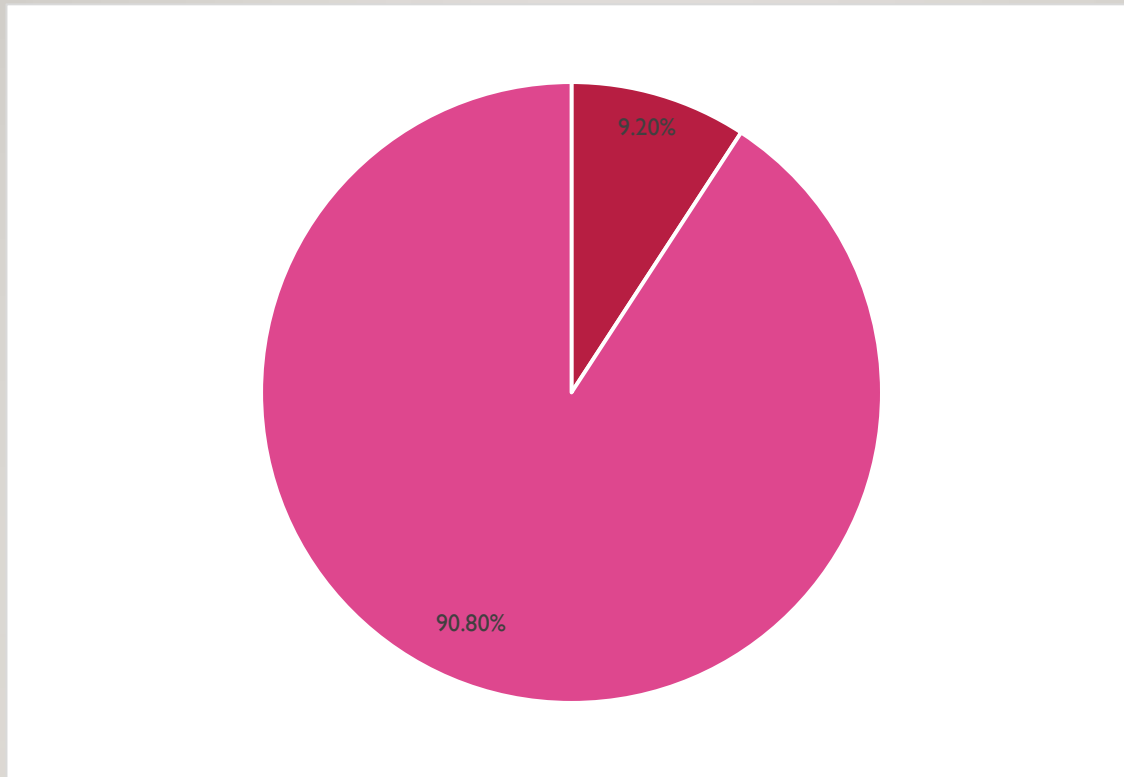


Figure (1): Sex distribution of the study group (n=87)

Table (2) : Clinical Presentations of study group (n=85)

Variable	Frequency	Percentage
Photosensitivity	40	45.9%
Oedema	46	52.87%
Abortion	8	9.19%
Deep vein thrombosis	4	4.59%
Arthritis	56	64.36%
Skin lesion	43	49.4%
Oral ulcer	45	51.72%
Alopecia	38	43.7%
Serositis	28	32.2%
Neurological manifestation	15	17.2%
Leukopenia	32	36.78%
Lymphopenia	28	32.18%
Thrombocytopenia	21	24.13%

64 MNA MLZOo Monday, 02 April 2018
Table (3) : Frequency Distribution of Serology of Autoantibodies (n=87)

Variable	Frequency	Percentage
ANA (positive >1/800)	54	62.06%
ANA (positive >1/400)	16	18.4%
Anti-DsDNA positive	39	44.82%
Anti-Sm positive	26	28.88%
Anti-Ro positive	18	20.7%
Anti-La positive	13	14.9%
Anti-RNP positive	16	18.4%
ACLA IgG positive	16	18.39%
ACLA IgM positive	12	13.39%
ACLA positive	43	49.42%
Direct Coomb's test positive	18	20.06%
Indirect Coomb's test positive	13	14.94%

Table (4) : Serum Vitamin D level of study group (n=87)

Serum Vitamin D level	Frequency	Percentage
Deficiency (≤ 20 ng/ml)	59	67.8%
Insufficiency (21-29ng/ml)	11	12.6%
Normal (> 30 ng/ml)	17	19.5%
Total	87	100%

44

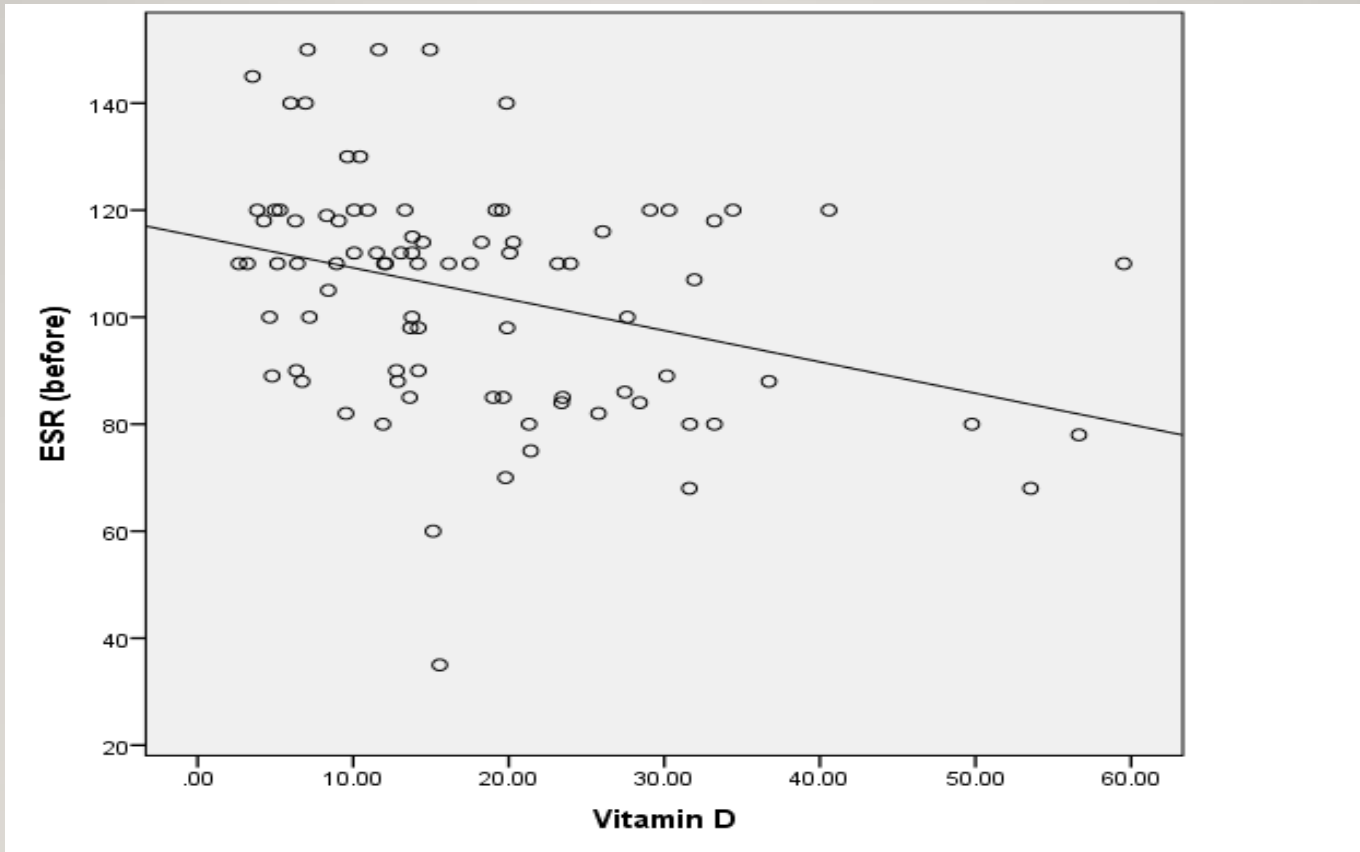


Figure (2) : Correlation between serum vitamin D level and ESR

45

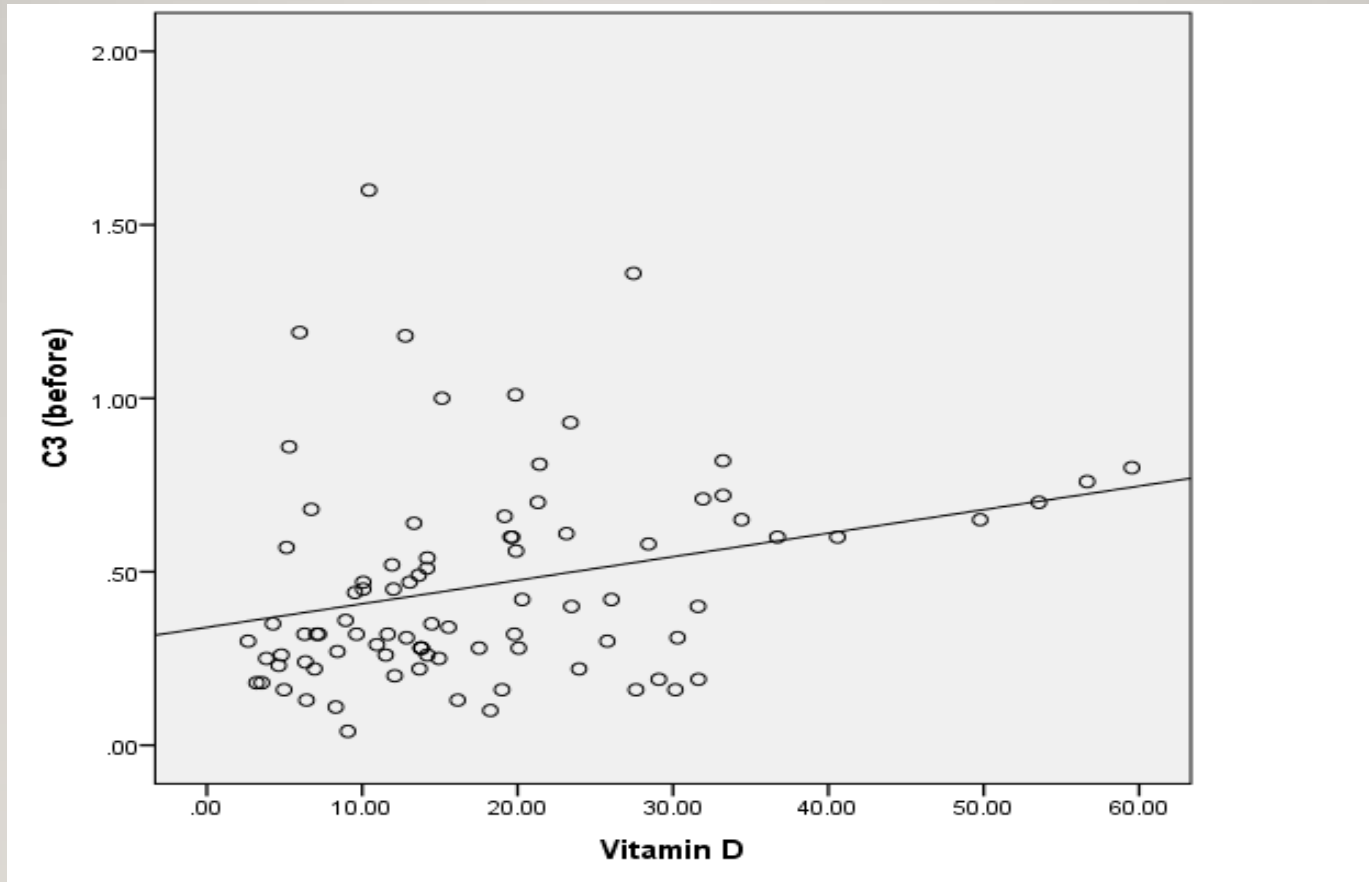


Figure (3) : Correlation between the serum vitamin D level and serum complement C3 level

46

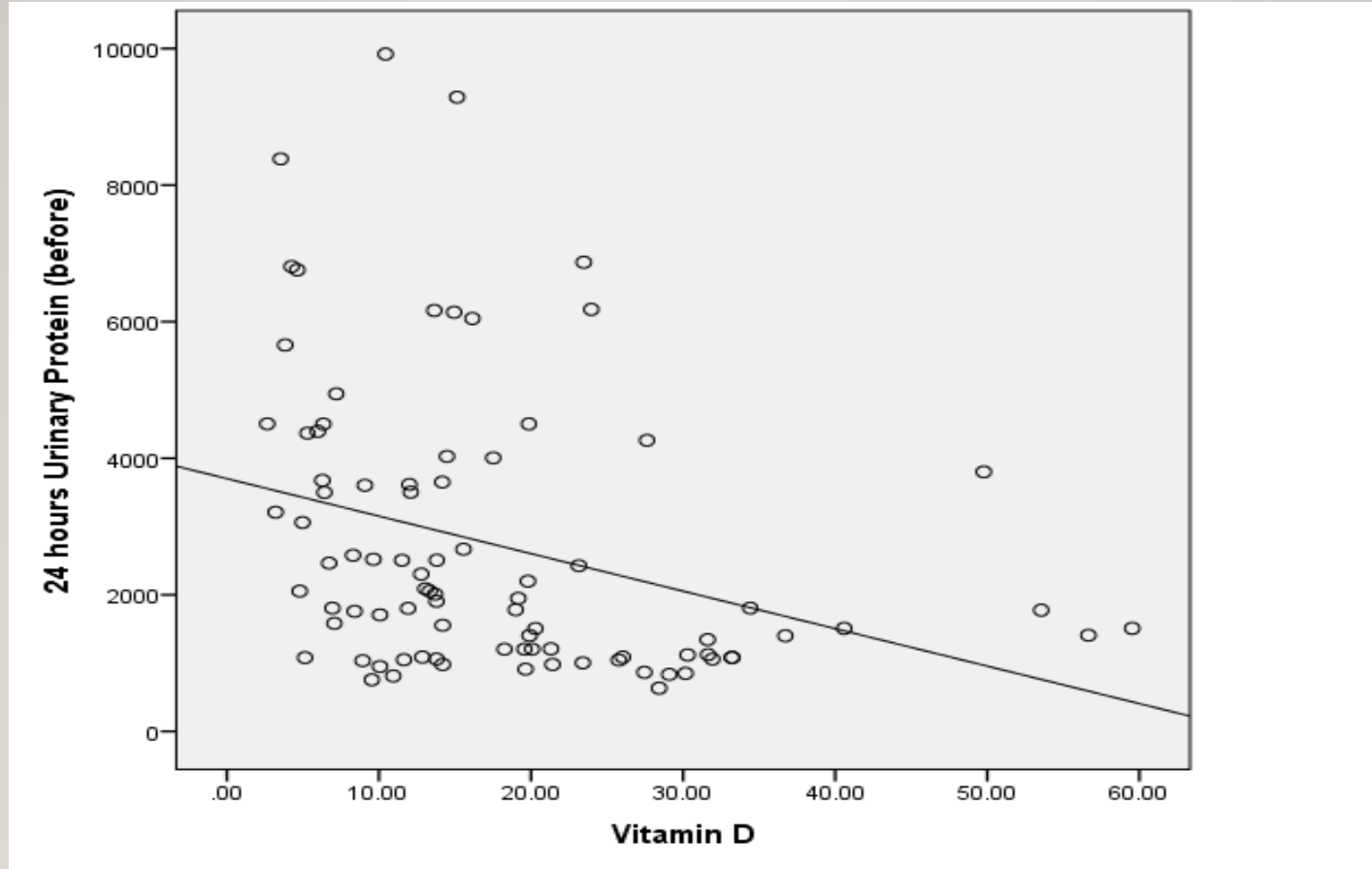


Figure (4): Correlation between serum vitamin D level and 24 hour urinary protein

47

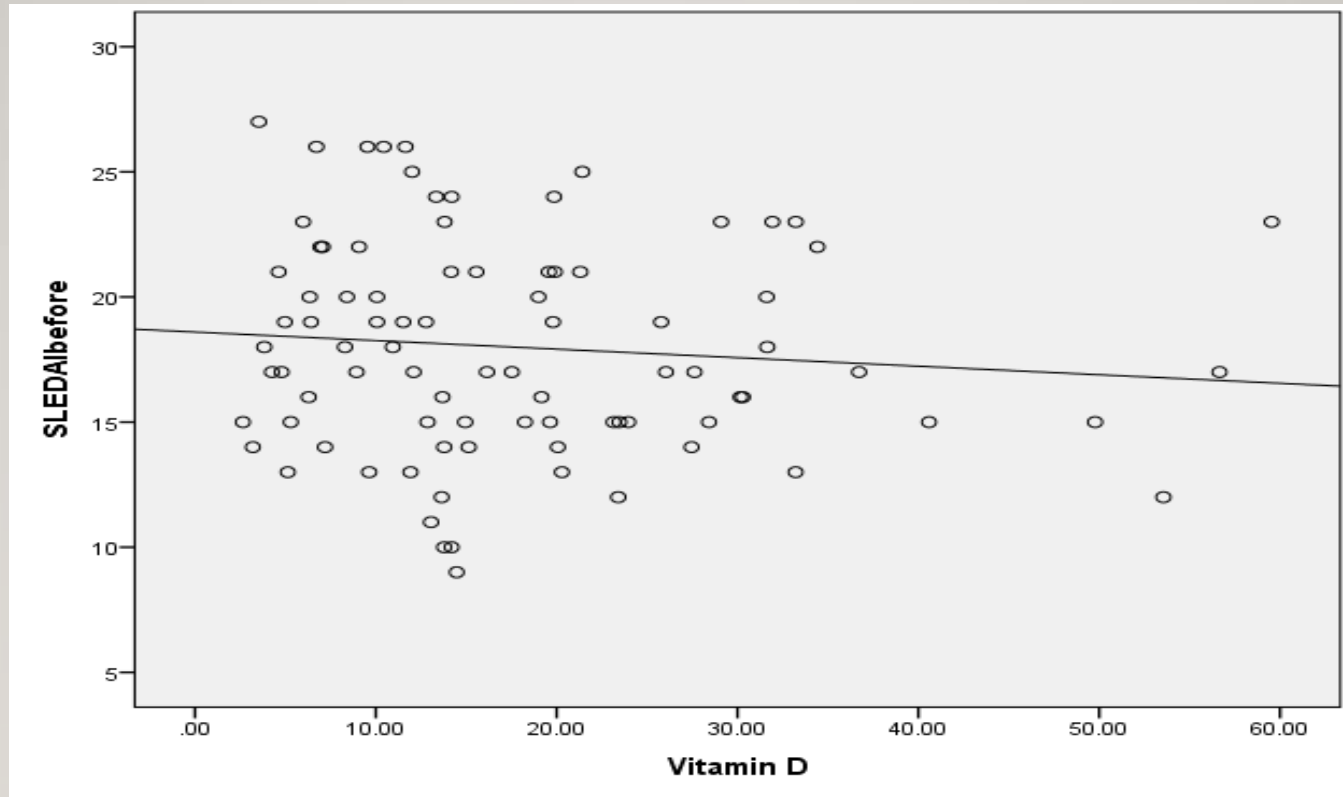
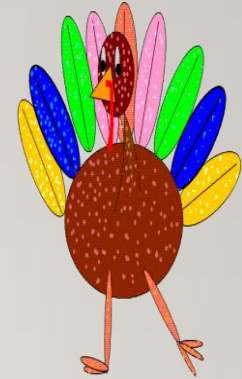


Figure (5) : Correlation between serum vitamin D and SLEDAI

CONTENTS

48

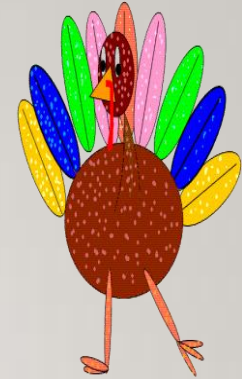
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

49

- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- **Conclusion**
- Acknowledgements
- References



50 CONCLUSION

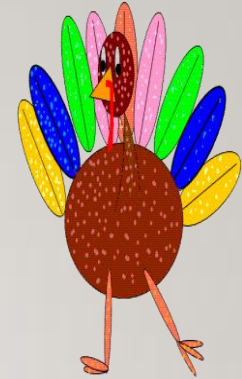
- We concluded that vitamin D deficiency is prevalent in SLE patients
- Vitamin D level correlated inversely with disease activity which suggest that inadequate vitamin D level, among other factors, probably contributes to the development of active disease of SLE.



CONTENTS

51

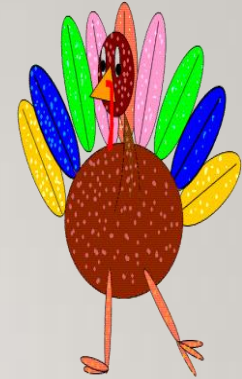
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References



CONTENTS

52

- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- **Acknowledgements**
- References



53 ACKNOWLEDGEMENTS

- To all my patients

54 ACKNOWLEDGEMENTS



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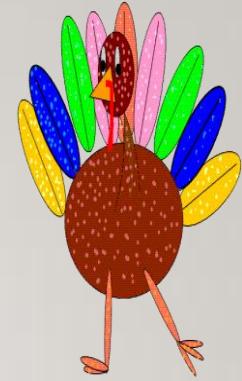
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CONTENTS

57

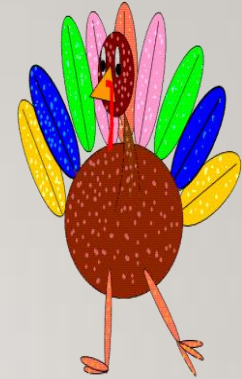
- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- References

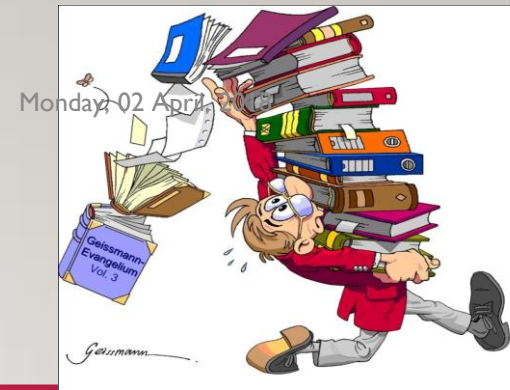


CONTENTS

58

- Introduction
- Aim and Objectives
- Research Hypothesis
- Methods and Procedures
- Results and Discussion
- Conclusion
- Acknowledgements
- **References**





59 REFERENCES

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61



