



The Indonesian Society for  
Biochemistry and  
Molecular Biology

The 22<sup>nd</sup> National Seminar of ISMB &  
International Seminar on Biochemistry and Molecular Biology

# ABSTRACT BOOK



UNIVERSITAS SAM RATULANGI  
9-10 NOVEMBER 2017

|    |               |                  |   |
|----|---------------|------------------|---|
| 5  | 14.45 – 15.00 | Grace Sanger     | Antioxidant And Anti-Diabetic Effect Of Ethyl Acetic Extract On Edible Marine Algae ( <i>Halimena Durvillae</i> ) Collected From North Sulawesi Coastal Area Of Indonesia |
| 6  | 15.00 – 15.15 | Eti Yerizel      | Effect of <i>Hylocerus Polyhizus</i> Extract On MDA Level and Catalase Activity In Hyperglycemia Rat White Strain Wistar  |
| 7  | 15.15 – 15.30 | Sunarti          | Relationship Between Body Fat And HOMA-IR In Individuals Type 2 Diabetes Mellitus After High Fibre Snack Consumption  |
| 8  | 15.30 – 15.45 | Pramudji Hastuti | Polymorphism of Resistin Gene is Correlated with Obesity and Insulin Resistance in Indonesia  |
| 9  | 15.45 – 16.00 | Evi Arfianti     | NRF2 Signalling Is Activated During The Early Stages Of Accelerated Diethylnitrosamine-Induced Hepatocarcinogenesis With Obesity And Diabetes                             |
| 10 | 16.00 – 16.15 | Eryati Darwin    | The Relationship Of Testosterone And Cortisol Level With Acne Vulgaris In The Adolescent Men  |
| 11 | 16.15 – 16.30 | Rika Susanti     | S100B Level Of Post Mortem Cerebrospinal Fluid and Serum In Blunt Head Trauma Cases   |

## The Relationship of Testosterone and Cortisol Level with Acne Vulgaris in The Adolescent Men

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### ABSTRACT

Acne vulgaris is a common chronic skin disease that occurs when hair follicles are clogged with dead skin cells and skin oil from forming blackheads, papules, pustules, nodules, and cysts. Approximately 85% of people have acne at some point in the course of their lifetime with the highest incidence is in the age of 14-19 years. The disease causes significant morbidity and affects patients physically and psychologically in terms of scarring, depression, anxiety and low self esteem. Genetic, hormonal, and psychological stress plays an important role in pathogenesis of acne vulgaris. Follicular hyperkeratinization, sebum production, presence of Propionibacterium acnes, inflammatory mediators, and androgens have been identified as a major component of acne. To determine the association of the blood testosterone and cortisol levels with the occurrence of acne vulgaris in adolescent men, we conducted an observational study with case control study design in 70 adolescent men in the age of 17-18 year old. They were divided into two groups of acne and control groups, 35 each. Blood samples were obtained from the cubital vein at 8:00 am to measure testosterone and cortisol hormones by using ELISA method. The study was approved by Research Ethics Committee of Medical Faculty Andalas University. The results showed that high testosterone levels were present in 40% of the acne group and 60% of the control group. The results showed that high testosterone levels were present in 40% of the acne group and 60% of the control group. There was no significant correlation between testosterone levels and acne vulgaris ( $p > 0.05$ ), but it seem that at the low levels of testosterone tended to have acne vulgaris 0.44 times greater than the low levels (OR <1). The High level of cortisol was present in 54.3% of the acne group and 51.4% of the control group. There were no significant different, but the tendency for acne seem 1.12 times greater at high level of cortisol than the low level (OR > 1). From this study, we conclude that there was a tendency that acne vulgaris occurs in groups with low level of testosterone and high level of cortisol.

**Keywords:** acne vulgaris, cortisol, testosterone

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## S100B LEVEL OF POST MORTEM CEREBROSPINAL FLUID AND SERUM IN BLUNT HEAD TRAUMA CASES

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### ABSTRACT

**Introduction.** Blunt head trauma is the leading cause of death in criminal cases. Various efforts have been made to find an alternative autopsy method to determine the cause of death. S100B level has been used as a biomarker in blunt head trauma for the living victims. The purpose of this study was to analyze the postmortem level of S100B in cerebrospinal fluid and serum particularly in determining the cause and the time of death.

**Method.** This experimental study used post test only group design. The treatment groups were divided into 8 groups. The samples of each group were 6 adults of *Rattus norvegicus variant sprague dawley*. The S100B level was checked at 0 hour, 1 hour, 2 hours and 3 hours post mortem. Analysis of postmortem level of S100B in cerebrospinal fluid and serum used the general linear model repeated measure test.

**Results.** There is an elevation level of postmortem S100B in cerebrospinal and serum on the death due to blunt head trauma and acute ketamine poisoning.

**Conclusions.** There is no significant difference of postmortem S100B level in cerebrospinal fluid and serum in the case of death due to blunt head trauma and acute ketamine poisoning.

**Keywords:** blunt head trauma, S100B, cause of death, time of death

**The relationship of testosterone and cortisol level with acne vulgaris in the adolescent men**



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**Introduction**

**Acne vulgaris:**

- self-limited disorder of the pilosebaceous unit that is seen primarily in adolescents.
- often heralds the onset of puberty
- the sequelae can be lifelong, with pitted or hypertrophic scar formation.
- prevalence hits its peak during the middle-to-late teenage period, with more than 85% of adolescents affected, and then steadily decreases
- may persist through the third decade or even later, particularly in women



**Causes of Acne Vulgaris**

- Polygenic and multifactorial
- Four main factors cause acne:
  - Excess oil production
  - Hair follicles clogged by oil and dead skin cells
  - Bacteria
  - Excess activity of a type of hormone (androgens)
- Appears on face, forehead, chest, upper back and shoulders because sebaceous glands



**Risk Factors for Acne Vulgaris**

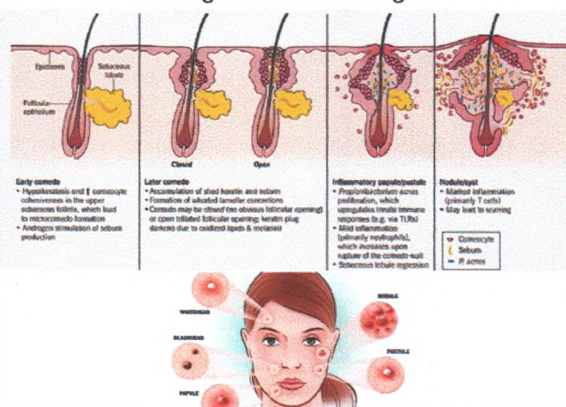
- Age
- Hormonal changes
  - teenagers
  - women and
  - medications
- Family history
- Greasy or oily substances
- Friction or pressure
- Stress



**Pathogenesis of Acne Vulgaris**

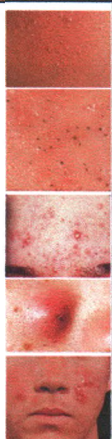
- Four basic step
  - 1) sebaceous gland hyperplasia → excessive sebum
  - 2) hyperkeratinization → micr.comedo-obstr.pores
  - 3) colonization and activity of Propionibacterium acnes
  - 4) inflammation
- Interrelated process
- Under hormonal and immune influence
- Connected to sebaceous gland, Acne typically appears on face, forehead, chest, upper back and shoulders

**Pathogenesis of Acne Vulgaris**



### Sign and Symptoms of Acne Vulgaris

- Whiteheads: closed plugged pores
- Blackheads: open plugged pores
- Papules: small red, tender bumps
- Pimples (pustules): which are papules with pus at their tips
- Nodules: Large, solid, painful lumps beneath the surface of the skin
- Cystic lesions: Painful, pus-filled lumps beneath the surface of the skin



### Aim of Study

To determine the association of the blood testosterone and cortisol levels with the occurrence of acne vulgaris in adolescent men

### Subject and Methods

- 70 adolescent men
- 17-18 year old.
- They were divided into two groups of acne and control groups, 35 each.
- Blood samples were obtained from the cubital vein at 8:00 am to measure testosterone and cortisol hormones by using ELISA method.
- The study was approved by Research Ethics Committee of Medical Faculty Andalas University.

### Results

Characteristic of Subject

|                  | Acne |       | Control |       | Total |       |
|------------------|------|-------|---------|-------|-------|-------|
|                  | No.  | %     | No.     | %     | No.   | %     |
| Age (years)      |      |       |         |       |       |       |
| - 17             | 18   | 51,43 | 15      | 42,86 | 33    | 46,14 |
| - 18             | 17   | 48,57 | 20      | 57,14 | 37    | 52,86 |
| Body weight (Kg) |      |       |         |       |       |       |
| - <58            | 18   | 51,43 | 21      | 60,00 | 39    | 44,39 |
| - ≥58 kg         | 17   | 48,57 | 14      | 40,00 | 31    | 55,71 |
| Type of Acne     |      |       |         |       |       |       |
| - Comedonal      | 2    | 5,71  | 0       | 0     | 2     | 2,86  |
| - Papule-pustula | 33   | 94,29 | 0       | 0     | 33    | 46,14 |
| - Nodulokistik   | 0    | 0     | 0       | 0     | 0     | 0     |

Table : Relationship between cortisol level and acne vulgaris

|         | Testosterone Level |       |      |       |     |     |
|---------|--------------------|-------|------|-------|-----|-----|
|         | Low                |       | High |       | No. | %   |
|         | No.                | %     | No.  | %     |     |     |
| Acne    | 20                 | 57,14 | 15   | 42,86 | 35  | 50  |
| Control | 14                 | 40,00 | 21   | 60,00 | 35  | 50  |
| Total   | 34                 | 48,57 | 36   | 51,43 | 70  | 100 |

the low levels of testosterone tended to have acne vulgaris 0.44 times greater than the low levels (OR <1)

Table : Relationship between cortisol level and acne vulgaris

|         | Cortisol level |       |      |       |     |     |
|---------|----------------|-------|------|-------|-----|-----|
|         | Low            |       | High |       | No. | %   |
|         | No.            | %     | No.  | %     |     |     |
| Acne    | 16             | 45,71 | 19   | 54,29 | 35  | 50  |
| Control | 16             | 45,71 | 19   | 54,29 | 35  | 50  |
| Total   | 32             | 45,71 | 38   | 54,29 | 70  | 100 |

the tendency for acne seem 1.12 times greater at high level of cortisol than the low level (OR> 1).

### Discussion

- Androgens has the effect of enlargement and increasing of sebaceous gland to promote sebum production
- This is because the glands that secrete the oil are sensitive to testosterone.
- The correlation between the normal rise in serum androgen levels and sebum production in the prepubertal period and the typical age of onset of acne (also the prepubertal period) supports an important role for androgens in acne.
- Stress not a causal of acne, but stress can make acne worse.

**Conclusion**

from this study we found that the tendency that high levels of low testosterone and high level of cortisol associated with the occurrence of acne vulgaris









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Application of Biochemistry and Molecular Biology on Drug Discovery and Advanced Diagnostics  
Sam Ratulangi University, Manado, Indonesia 9-10 November, 2017

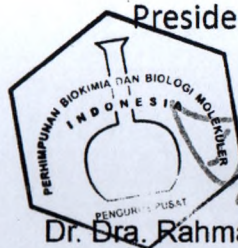
## Certificate

### **Eryati Darwin**

has successfully participated

as

## **Oral Presenter**



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Chairman,

dr. Janno B. B Bernadus M.Biomed