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Editorial .................................................................................................................. 1

Opinion :
RESEARCH IN THE DEVELOPMENT OF MEDICAL SCIENCE AND TECHNOLOGY
(Soeoarta) ................................................................................................................... 2

THE ASSOCIATION OF MITOCHONDRIAL DNA MUTATION G3316A AND T3394C
WITH DIABETES MELLITUS
(Agun Pramono) ....................................................................................................... 3

THE EFFECTS OF UNILATERAL TESTICULAR TORSION UPON IMMUNITY MODULATION
AND APOPTOSIS OF GERMINAL CELLS IN THE CONTRALATERAL TESTIS
An Experimental Study in Rats
(Sumarto Hardjowijoto) ............................................................................................ 9

THE EFFECTS OF 5X REDUCTASE INHIBITOR AND ESTROGEN
IN PROSTATE PROLIFERATION
An Experimental Study in Rats
(Soeoarta, Doddy M Soebadi, Hendromarto, I Ketut Sudarma) ............................... 18

QUALITY OF REFILLED DRINKING WATER IN SURABAYA CITY
(Soedjajadi Keman) .................................................................................................. 29

ADEQUATE HELP FOR PATIENTS WITH CERVICAL CANCER? THE REFERRAL SYSTEM
IN INDONESIA. A DESCRIPTIVE COMPARISON STUDY IN FOUR PROVINCES
(Linca S Nooy, Sijehenny, E Schade) ........................................................................ 36

IN VITRO DRUG SENSITIVITY OF TRYPANOSOMA EVANSI BANGKALAN ISOLATES
(Mochamad Lazuardi) .............................................................................................. 43

COMPARISON OF DEAD VICTIMS DUE TO BURN BETWEEN PERIODS
(Hanadi Apuranto) .................................................................................................... 49

SERUM OSMOLAL GAP IN HEALTHY PERSONS. COMPARISON OF ELEVEN FORMULAS
FOR CALCULATING OSMOLALITY
(SP Ediputo) ............................................................................................................. 53

TRAUMATIC OPTIC NEUROPATHY IN THE DIVISION OF NEURO-OPTHALMOLOGY,
DEPARTMENT OF OPHTHALMOLOGY, DR SOETOMO TEACHING HOSPITAL, SURABAYA
(Siti Moochidarny Yogiantoro) ................................................................................. 60

THE POTENTIAL ROLE OF L- LIPOIC ACID IN THE MANAGEMENT
OF DIABETES MELLITUS. POSSIBLE MOLECULAR MECHANISM
(Purwono Sunyoto) ................................................................................................. 55

Review Article and Clinical Experience
METABOLIC SYNDROME VS INSULIN RESISTANCE SYNDROME
(A CLUSTER OF COMPONENTS AND STRATEGIES FOR TREATMENT)
(Askander Tjokroprawiro) ...................................................................................... 71

Abstracts ..................................................................................................................... 78

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Vol. 41
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# Table of Contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EDITORIAL Vol 41 No 1 2005</td>
<td>1 - 1</td>
</tr>
<tr>
<td>2</td>
<td>OPINION: RESEARCH IN THE DEVELOPMENT OF MEDICAL SCIENCE AND TECHNOLOGY</td>
<td>2 - 2</td>
</tr>
<tr>
<td>3</td>
<td>The Association of Mitochondrial DNA Mutation G3316a and T3394c with Diabetes Mellitus</td>
<td>3 - 8</td>
</tr>
<tr>
<td>4</td>
<td>The Effects of Unilateral Testicular Torsion upon Immunity Modulation and Apoptosis of Germinal Cells in the Contralateral Testis. An Experimental Study in Rats</td>
<td>9 - 17</td>
</tr>
<tr>
<td>5</td>
<td>The Effect of 5α Reductase Inhibitor and Estrogen in Prostate Proliferation. An Experimental Study in Rats</td>
<td>18 - 28</td>
</tr>
<tr>
<td>6</td>
<td>Quality of Refilled Drinking Water in Surabaya City</td>
<td>29 - 35</td>
</tr>
<tr>
<td>7</td>
<td>Adequate Help for Patients with Cervical Cancer? The Referral System in Indonesia. A Descriptive Comparison Study in Four Provinces</td>
<td>36 - 42</td>
</tr>
<tr>
<td>8</td>
<td>In Vitro Drug Sensitivity of Trypanosoma evansi Bangkalan Isolates</td>
<td>43 - 48</td>
</tr>
<tr>
<td>9</td>
<td>Comparison of Dead Victims due to Burn Between Periods</td>
<td>49 - 52</td>
</tr>
<tr>
<td>10</td>
<td>Serum Osmolal Gap in Healthy Persons. Comparison of Eleven Formulas for Calculating Osmolality</td>
<td>53 - 59</td>
</tr>
<tr>
<td>11</td>
<td>Traumatic Optic Neuropathy in the Division of Neuro-Ophthalmology, Department of Ophthalmology, Dr Soetomo Teaching Hospital, Surabaya</td>
<td>60 - 64</td>
</tr>
<tr>
<td>12</td>
<td>The Potential Role of Î±-Lipoic Acid in the Management of Diabetes Mellitus. Possible Molecular Mechanism</td>
<td>65 - 70</td>
</tr>
<tr>
<td>13</td>
<td>Review Article and Clinical Experience: Metabolic Syndrome vs Insulin Resistance Syndrome (A Cluster of Components and Strategies for Treatment)</td>
<td>71 - 77</td>
</tr>
</tbody>
</table>
The Effect of 5α Reductase Inhibitor and Estrogen in Prostate Proliferation. An Experimental Study in Rats

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Abstract

This was an experimental study using posttest control group design involving Wistar strain Rattus norwegicus as experimental animal. The purpose of this study was to explain the mechanism of BPH in elderly. Samples were randomly divided into 2 groups, 1- and 2-month group, each comprising 26 rats. Each group was divided further into two subgroups, one group received combined estrogen and finasteride, and the other, receiving finasteride only, served as control group. Each subgroup consisted of 13 rats. After treatment for 1 and 2 months, the prostate was removed and examined for TGF-ß1, EGF, FGF, and proliferation. Immunohistochemistry was used for examining TGF-ß1, EGF, FGF, and the examination of proliferation was carried out using graticulae. This study employed univariate analysis with 2 sample t test as TGF-ß1, EGF, and FGF had no correlation. Data analysis used in this research was univariate analysis with 2 sample t test. Analysis result showed that estrogen could reduce TGF-ß1 significantly in 1 month and 2 month groups (p < 0.05) and estrogen also stimulated significant increase of EGF in 2 month groups (p < 0.05). Estrogen also increased proliferation significantly in both 1 and 2 month groups (p < 0.05) but estrogen did not increase FGF significantly in both groups. Multiple regression analysis on the effect of TGF-ß1, EGF, FGF and estrogen to proliferation revealed that only TGF-ß1 had negative feedback. This indicated that TGF-ß1 decreased, so that the proliferation increased. Estrogen had positive impact in proliferation, indicating that increased estrogen would also increase proliferation. In conclusion, estrogen increased the proliferation of the prostate cell and EGF significantly and decreased the expression of TGF-ß1 significantly. This leads to inhibition of proliferation, and finally may cause the occurrence of BPH.

Keyword : prostate, estrogen, TGF-ÃŸ1, EGF, FGF, BPH,

Daftar Pustaka :