FOLIA MEDICA INDONESIANA
Vol. 40 No. 3 July - September 2004

Editorial ........................................................................................................ 69

Opinion:
INTERNATIONAL ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH INVOLVING HUMAN SUBJECTS ..................................................... 70
(Nanizar Zaman-Joimoes)

POLYMERASE CHAIN REACTION (PCR) FOR THE DIAGNOSIS OF CERVICAL TUBERCULOUS LYMPHADENITIS .................................................. 71
(Sunarto Reksoprawiro, Tjahjo Winitoyo, Indrayanti NS)

CORRELATION BETWEEN THE METHODS OF FLOWCYTOMETRY, MANUAL LIGHT AND FLUORESCENCE MICROSCOPES FOR CD4 CELL COUNT IN NORMAL ADULTS ........................................................................... 76
(Endang Retnowati, Wira Santoso, Nasruludin)

IRON DEFICIENCY, LOW ARTERIAL OXYGEN SATURATION AND HIGH HEMATOCRIT LEVEL AS A MAJOR MICRO-ENVIRONMENTAL RISK FACTORS IN THE DEVELOPMENT OF BRAIN ABCESS IN PATIENTS WITH TETRALOGY OF FALLOT ................................................................................................. 86
(Teddy Ohteindra)

THE EFFECT OF CELLULOSE ON APOPTOSIS OF COLON EPITHELIAL CELLS OF BALB/C MICE THAT INDUCED BY 9,10-DIMETHYL-1,2-BENZ(A)ANTHRACENE ......................................................... 90
(Gondo Mastuti, Sulianto Toit Putra, Soegeng Soekarto Mardiprawiro)

PRESERVED AMNIOTIC MEMBRANE GRAFT AFTER BARE SCLERA TECHNIQUE WITH MITOMYCIN C FOR PTERYGIUM SURGERY ......................................................................................................................... 99
(Gatut Suhendro)

PHARMACODYNAMIC IDENTIFICATION OF ANTISEIZURE EFFECT OF LIGUSTROSID GLYCOSIDE (A CNS ACTIVE SUBSTANCE) ISOLATED FROM Fraxinus griffithii Clarke ON MICE ...................................................................................... 103
(Achmad Basor)

THE MODIFICATION OF OSCE TO REPLACE THE ORAL EXAMINATION IN THE DEPARTMENT OF OTORHINOLARYNGOLOGY, AIRLANGGA UNIVERSITY SCHOOL OF MEDICINE ...................................................... 108
(Sardiqono Soedjadi)

BODY SURFACE AREA (BSA) AS THE PREDICTOR OF RENAL PARENCHYMAL VOLUME IN HEALTHY ADULT ......................................................................... 112
(H. Chuanadi Ermanito, Elysanti Dwi Martadani, Windhu Poemomo)

EFFECTICY OF ETHYL ALCOHOL GLYCERIN 69% HANDBRUB IN NEONATAL WARD DR. SOETOMO HOSPITAL. A RANDOMIZED CONTROLLED TRIAL ................................................................................................. 121
(Sylviasi Triahr Damanik, et al)

Review Article and Clinical Experience
RECENT ADVANCES IN DIABETES TREATMENT OPTIONS (CARDIOPROTECTIVE NOVEL OHA AND INSULIN GLARGINE) .................................................. 132
(Asikandar Tjakoprawiro)

IMPACTED BUTTON BATTERY IN THE NASAL CAVITY .................................................. 139
(Sri Hariwati JPB)

Abstract ........................................................................................................ 143

Published by:
AILLANGGA UNIVERSITY SCHOOL OF MEDICINE
Accredited no. 02/DIKTI/Kep/2002

Folia Medica Indonesiana Vol. 40 No. 3 Page 69-147 Jul - Sept 2004 ISSN 0303-7932
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EDITORIAL Vol 40 No 3 2004</td>
<td>69 - 69</td>
</tr>
<tr>
<td>2</td>
<td>OPINION: INTERNATIONAL ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH INVOLVING HUMAN SUBJECTS</td>
<td>70 - 70</td>
</tr>
<tr>
<td>3</td>
<td>Polymerase Chain Reaction (PCR) for the Diagnosis of Cervical Tuberculous Lymphadenitis</td>
<td>71 - 75</td>
</tr>
<tr>
<td>4</td>
<td>Correlation between the Methods of Flowcytometry, Manual Light and Fluorescence Microscopes for CD4 Cell Count in Normal Adults</td>
<td>76 - 85</td>
</tr>
<tr>
<td>5</td>
<td>Iron Deficiency, Low Arterial Oxygen Saturation and High Hematocrit Level as a Major Micro-Environmental Risk Factors in the Development of Brain Abscess in Patients with Tetralogy of Fallot</td>
<td>86 - 89</td>
</tr>
<tr>
<td>6</td>
<td>The Effect of Cellulose on Apoptosis of Colon Epithelial Cells of BALB/C Mice that Induced by 9,10-Dimethyl-1,2-Benz(A)Anthracene</td>
<td>90 - 98</td>
</tr>
<tr>
<td>7</td>
<td>Preserved Amniotic Membrane Graft after Bare Sclera Technique with Mitomycin C for Pterygium Surgery</td>
<td>99 - 102</td>
</tr>
<tr>
<td>8</td>
<td>Pharmacodynamic Identification of Antiseizure Effect of Ligustrosid glycoside (A CNS Active Substance) Isolated from Fraxinus Griffithii Clarke on Mice</td>
<td>103 - 107</td>
</tr>
<tr>
<td>9</td>
<td>The Modification of OSCE to Replace the Oral Examination in the Department of Otorhinolaryngology, Airlangga University School of Medicine</td>
<td>108 - 111</td>
</tr>
<tr>
<td>10</td>
<td>Body Surface Area (BSA) as the Predictor of Renal Parenchymal Volume in Healthy Adult</td>
<td>112 - 120</td>
</tr>
<tr>
<td>11</td>
<td>Efficacy of Ethyl Alcohol Glycerin 69% Handrub in Neonatal Ward Dr. Soetomo Hospital. A Randomised Controlled Trial</td>
<td>121 - 131</td>
</tr>
<tr>
<td>12</td>
<td>Review Article and Clinical Experience: Recent Advances in Diabetes Treatment Options (Cardioprotective Novel OHA and Insulin Glargine)</td>
<td>132 - 138</td>
</tr>
<tr>
<td>13</td>
<td>Impacted Button Battery in the Nasal Cavity</td>
<td>139 - 142</td>
</tr>
</tbody>
</table>
The Effect of Cellulose on Apoptosis of Colon Epithelial Cells of BALB/C Mice that Induced by 9,10-Dimethyl-1,2-Benz(A)Anthracene

The Effect of Cellulose on Apoptosis of Colon Epithelial Cells of BALB/C Mice that Induced by 9,10-Dimethyl-1,2-Benz(A)Anthracene

1. Gondo Mastutik --> Department of Anatomic Pathology Airlangga University School of Medicine
2. Suhartono Taat Putra --> Department of Anatomic Pathology Airlangga University School of Medicine
3. Soegeng Soekamto Martoprawiro --> Department of Anatomic Pathology Airlangga University School of Medicine

Abstract

Incidences and deaths caused by cancer remains high. Epidemiological studies show that dietary fiber, including cellulose, may reduce the incidence of colon cancer. Cellulose is one of dietary fiber that can not be digested by digestive enzyme but can be fermented by colon microflora to produce butyrate, a short chain fatty acid (SCFA). Butyrate inhibits histone deacetylase (HDAC) enzyme and the process of apoptosis. However, the effect of cellulose on apoptosis of colon epithelial cells are not known. The aim of this study was to prove increasing the number apoptotic colon epithelial cells of BALB/C mice that were fed with cellulose and then were exposed to 9,10-dimethyl-1,2-benz(a) anthracene (DMBA). The design of this experiment was posttest only control group design. The male BALB/C mice of 12 weeks old with body weight of 30 - 40 grams were used in this experiment and were given feed containing 0% or 5% cellulose. Two weeks after cellulose administration the mice were exposed to DMBA and sacrificed 5 days later. The colon was removed and processed in the paraffin block, then was stained with TUNNEL (terminal deoxyuridine nucleotide end labeling) assay technique with apoptag detection kit. The data were analyzed by T-test. Results showed that there was difference (p < 0.05) between the number of apoptotic colon epithelial cells in mice fed with cellulose and those that were not fed with cellulose. The difference was marked by increasing the number of apoptotic colon epithelial cells in mice fed with cellulose. The conclusion of this experiment is that cellulose can increase the number of apoptotic colon epithelial cells of BALB/C mice that are exposed by DMBA. The effect of cellulose on colon carcinogenesis presents as the increasing number of apoptotic colon epithelial cells that are exposed by DMBA.

Keyword : cellulose, DMBA, apoptosis, ,

Daftar Pustaka :