BLOOD GLUCOSE REDUCTION IN MICE (Mus musculus) RESULTING FROM THE ADMINISTRATION OF PARE (Momordica charantia) FRUIT FLESH JUICE
(Jessica Hefiana Jaya, Ahmad Basori, Sudarno)

EFFECT OF REPROCESSING CELLULOSE DIALYZER SUBSTITUTED WITH THE PRODUCT P-HYDROGEN PEROXIDE TO CLEARANCE UREA DIALYZER IN CHRONIC HEMODIALYSIS PATIENT
(Fathia Ramadiari, Budi Suprapti, Aditiawardana, Widodo Basuki)

SOOT PARTICULATE EXPOSURE INCREASES CD54/INTERCELLULAR ADHESION MOLECULE-1 (ICAM-1) EXPRESSION IN CARDIOVASCULAR DISORDER
(Melty Ardiana, M. Amruddin)

RED YEAST RICE (Monascus purpureus) EXTRACT INCREASES INTERLEUKIN-2 LEVEL IN DENGUE INFECTION PATIENTS
(Anita Rrahmadin Adnan, Suhatro, Erwin Astha Tryono)

EFFECTS OF ZINC ON DIFFERENT NUTRITION IMPROVEMENT STATUS IN HIV/AIDS PATIENT
(Sukma Sahadeva, Bambang W, Joowono Soerono, Erwin Astha Tryono)

THE INTESTINAL CRYPTOSPORIDIOSIS IN HIV/AIDS PATIENTS WHO HAVE HOMOSEXUAL BEHAVIOUR
(R Heru Prasetyo)

CHARACTERISTICS OF HV-POSITIVE PREGNANT WOMEN IN DR. SOETOMO HOSPITAL, SURABAYA
(Sasabila Shihab, Eeighthy Mardiyan K, Erwin Astha Tryono)

PERSONALITY AFFECTS DEPRESSION OCCURRENCE IN HIV/AIDS PATIENT
(Fratwi Yuliahana E, Margaretta Maria Maramis, Erwin Astha Tryono)

HEATING THERAPY LOWERS BLOOD GLUCOSE LEVEL IN MICE (Mus musculus)
(Cunta Pramesh Hayuningtyas, Lilik Menawati, Elyana Asnar)
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BLOOD GLUCOSE REDUCTION IN MICE (Mus musculus) RESULTING FROM THE ADMINISTRATION OF PARE (Momordica charantia) FRUIT FLESH JUICE</td>
<td>43 - 49</td>
</tr>
<tr>
<td>2</td>
<td>EFFECT OF REPROCESSING CELLULOSE DIALYZER SUBSTITUTED WITH THE PRODUCT R-HYDROGEN PEROXIDE TO CLEARANCE UREA DIALYZER IN CHRONIC HEMODIALYSIS PATIENT</td>
<td>50 - 53</td>
</tr>
<tr>
<td>3</td>
<td>SOOT PARTICULATE EXPOSURE INCREASES CD54/INTERCELLULAR ADHESION MOLECULE-1 (ICAM-1) EXPRESSION IN CARDIOVASCULAR DISORDER</td>
<td>54 - 57</td>
</tr>
<tr>
<td>4</td>
<td>RED YEAST RICE (Monascus Purpureus) EXTRACT INCREASES INTERLEUKIN-2 LEVEL IN DENGUE INFECTION PATIENTS</td>
<td>58 - 66</td>
</tr>
<tr>
<td>5</td>
<td>EFFECTS OF ZINC ON DIFFERENT NUTRITION IMPROVEMENT STATUS IN HIV/AIDS PATIENT</td>
<td>67 - 74</td>
</tr>
<tr>
<td>6</td>
<td>THE INTESTINAL CRYPTOSPORIDIOSIS IN HIV/AIDS PATIENTS WHO HAVE HOMOSEXUAL BEHAVIOUR</td>
<td>75 - 76</td>
</tr>
<tr>
<td>7</td>
<td>CHARACTERISTICS OF HIV-POSITIVE PREGNANT WOMEN IN DR. SOETOMO HOSPITAL, SURABAYA</td>
<td>77 - 80</td>
</tr>
<tr>
<td>8</td>
<td>PERSONALITY AFFECTS DEPRESSION OCCURRENCE IN HIV/AIDS PATIENT</td>
<td>81 - 83</td>
</tr>
<tr>
<td>9</td>
<td>HEATING THERAPY LOWERS BLOOD GLUCOSE LEVEL IN MICE (Mus musculus)</td>
<td>84 - 89</td>
</tr>
</tbody>
</table>
SOOT PARTICULATE EXPOSURE INCREASES CD54/INTERCELLULAR ADHESION MOLECULE-1 (ICAM-1) EXPRESSION IN CARDIOVASCULAR DISORDER

Abstract

Exposure of air pollution has become a risk factor for cardiovascular disease. One mechanism thought to contribute is oxidative stress, which will increase the reactive oxygen species resulting in release of pro-inflammatory cytokines and increased expression of adhesion molecules such as intercellular adhesion molecule-1 (ICAM-1). The aim of this study was to describe the effects of soot particulate (carbon black powder) exposures on ICAM-1 expressions in mechanism of cardiovascular disorders. Experiments were performed on white female rats (Rattus novergicus) divided into 3 groups: control group (P0) (n=12), without exposure to soot particulate; an treatment group 1 (P1) (n=12), exposed to soot particulate concentration of 532 mg/m3 one hour/day for 30 days; and an treatment group 2 (P2) (n=12), exposed to soot particulate concentration of 1064 mg/m3 one hour/day for 30 days. Immunohistochemical staining was used to quantify the expression of ICAM-1 in cardiac tissues. We quantified the expressions of ICAM-1 with the number of immunoreactive cells in 5 fields of view. The mean ICAM-1 expressions were different between P0, P1 and P2 (4.9, 21.47, 36.33). Expression of ICAM-1 was statistically significant between three groups (p=0.001). The increase of ICAM-1 expression in P0 compared to P1 (p=0.019), P0 compared to P2 (p=0.000) and P1 compared to P2 (p=0.045) were significant.

Exposures to soot particulate matter increased the ICAM-1 expression in subjects significantly. Our findings suggest a key role of activation inflammatory pathway in response to soot particulate exposure in cardiovascular disease.

Keyword : soot, particulate, cardiovascular, disorders, oxidative, stress, ICAM-1,

Daftar Pustaka :