

Post Analysis Identification of Transfusion Transmissible Infections among Screened Blood Donor Samples from 2011-2015 in Selected Tertiary Hospitals in Nueva Ecija

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The study was conducted to identify and determine the most prevalent cases of transfusion transmissible infections (TTI's) among blood donor samples from 2011-2015 in selected tertiary hospitals in the province of Nueva Ecija. The study included five screening tests, namely: The Human Immunodeficiency Virus (HIV); Hepatitis B Surface Antigen (HBsAg) for Hepatitis B; Hepatitis C Virus (HCV) for Hepatitis C; Malaria and Rapid Plasma Reagin (RPR) for the determination of Syphilis and used enhanced electrochemiluminescence; Enzyme Linked Immunosorbent assay; immunochromatography; and *Treponema pallidum* hemagglutination were used as the guiding principles in performing the procedures. These five serological procedures determined the potentially life threatening transfusion transmissible infections. There were a total of 74,813 blood donors who were examined, comprising 73,263 (97.93%) males and 50,390 (67.35%) replacement donors. The cumulative seroprevalences of Hepatitis B (HBsAg), Syphilis (RPR), Hepatitis C (HCV), HIV and Malaria were 84.49%, 6.28%, 5.00%, 4.00% and 0.23%, respectively. The overall seroactivity in the study was said to be significant since the computed p value ($p < 0.000$) was less than the 0.05 level of significance. Thus, the null hypothesis was rejected except from the donation type because there was no statistical data being computed due to replacement system among the tertiary hospitals in the province of Nueva Ecija. To reduce the cases of TTI's, donors should be aware and educated on the blood donation program and strict implementation of volunteerism policy and careful selection of blood donors be observed. Likewise, the gold standard in testing should be implemented to the highest degree thus it will help to reduce the possible risk of transmission were screening tests were to be performed.

Keywords: transfusion transmissible infections, seroreactivity, gold standards, electrochemiluminescence, seroprevalences

Comparison of the Efficacy of Intravenous L-Ornithine-L-Aspartate in Patients with Hepatic Encephalopathy: a Meta-analysis

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BACKGROUND: Portosystemic encephalopathy or hepatic encephalopathy, manifests as changes in behavior or altered mental status that signifies liver failure. In hepatic encephalopathy, blood ammonia levels rise due to the inability of the liver to remove gut derived neurotoxins leading to neurologic symptoms. The mainstay of treatment for hepatic encephalopathy is lactulose, which results in colonic acidification. However, due to advances made on the field of medicine, L-ornithine-L-aspartate, a stable salt of two natural nonessential amino acids, is also being used for the treatment of hepatic encephalopathy. The study aims to assess the efficacy of Intravenous L-ornithine-L-aspartate in patients with Hepatic Encephalopathy.

OBJECTIVE: To determine the efficacy of L-ornithine-L-aspartate in patients with hepatic encephalopathy

DATA SOURCE: Relevant studies published from 2008-2015, were identified by searches in Pubmed and Cochrane.

STUDY SELECTION: All randomized placebo controlled studies and a placebo controlled blinded study that used intravenous L-ornithine-L-aspartate as a therapy for patients with hepatic encephalopathy.

RESULTS: Resulting p value of 0.137 denotes that heterogeneity does exist, thus random effects model is preferred. P value for overall of 0.035 denotes significant difference on the proportion/incidence of improvement in Hepatic encephalopathy between treatment (LOLA) and control group. Specifically, resulting overall odds ratio of 2.118 indicates that treatment group (LOLA) 2.118 times more likely to improve in HE as compared to control group

CONCLUSION: The result of this meta-analysis shows that the use of intravenous L-ornithine-L-aspartate leads to improvement of patients with hepatic encephalopathy.

Keywords: L-ornithine-L-aspartate, LOLA, Hepatic Encephalopathy

Efficacy of Atorvastatin in the Prevention of Contrast-induced Nephropathy among Patients Undergoing Elective Angiography: a Meta-analysis of Randomized Controlled Trials

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BACKGROUND: Contrast-induced nephropathy is the third most common cause of acute kidney injury in hospitalized patients especially those with cardiovascular pathology. Pathophysiologic mechanisms proposed to explain its occurrence includes direct toxicity of the contrast media by free radicals and oxidative stress, renal medullary hypoxia and renal tubular apoptosis. Aside from being used for dyslipidemia, statins also decrease oxidative stress and vascular inflammation. Atorvastatin was studied to have renal protective actions to prevent contrast-induced nephropathy.

OBJECTIVE: To determine whether Atorvastatin do prevent contrast-induced nephropathy among patients undergoing coronary angiography.

DATA SOURCE: Relevant studies published from 2013-2018, were identified by searches in Pubmed and Cochrane

STUDY SELECTION: All randomized controlled, double blinded clinical trials that used Atorvastatin to prevent contrast-induced nephropathy among patients undergoing coronary angiography

ANALYSIS: The odds ratio (OR) with 95% confidence interval (CI) was calculated. The statistical significance of the pooled RR was examined by the Z-test. Interstudy variations and heterogeneities were estimated using Cochran's Q-statistic with $P < 0.05$ indicating a statistically significant heterogeneity.

RESULTS: Pooled incidence of contrast-induced nephropathy in the case group was 10/255 (3.9%) while those in control group was 28/255 (9.8%). Resulting p value of 0.7162 denotes that heterogeneity does not exist, thus fixed effects model is preferred. P value for overall of 0.003 denotes significant difference on the proportion/incidence of CIN between treatment and control group. Specifically, resulting overall odds ratio of 0.324 indicates that treatment group (Atorvastatin) has significantly lower incidence of contrast-induced nephropathy as compared to control group.

CONCLUSION: This study favored the use of Atorvastatin in the prevention of contrast-induced nephropathy among patients undergoing elective angiography.

Keywords: Statins, Atorvastatin, contrast-induced nephropathy, angiography

Oral Research Presentation – Professional Category

High-dose vs Low-dose Proton Pump Inhibitors for the Prevention of Rebleeding after Endoscopic Hemostasis of Bleeding Peptic Ulcers: a Meta-analysis

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Background: High-dose omeprazole reduces the rate of recurrent bleeding after endoscopic treatment of peptic ulcer bleeding. However, the effectiveness of high-dose vs. standard-dose omeprazole in peptic ulcer bleeding has never been shown.

Aim: To compare the rebleeding rate of high-dose and standard-dose PPI use after endoscopic hemostasis.

Methods: PubMed was searched to identify relevant randomized controlled trials (RCTs). Eligible trials were 3 RCTs that compared high-dose PPI with low-dose PPI following endoscopic hemostasis. The primary endpoint was rebleeding. The meta-analysis was performed with a fixed effects model

Main results: The results showed that high-dose intravenous PPI was not superior to low-dose intravenous PPI in reducing rebleeding (overall rebleeding rate of 7.52% for high dose as compared to 10.45% for Low Dose)

Conclusion: Low-dose intravenous PPI can achieve the same efficacy as high-dose PPI following endoscopic hemostasis.

Keywords: Proton Pump Inhibitors, Bleeding Peptic Ulcer, Endoscopic Hemostasis

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Background: The anthracyclines currently approved in the United States are key components of many chemotherapeutic regimens, having demonstrated efficacy in lymphomas and many solid tumors, including breast and SCLC. This class of agents is clearly the most cardiotoxic to date acutely producing arrhythmias, LV dysfunction, and pericarditis and chronically producing LV dysfunction and HF. Several successful preventative strategies have been identified, thus, it is necessary to assemble clinical evidence that prophylactic pharmacological interventions could prevent left ventricular (LV) dysfunction and heart failure in patients undergoing chemotherapy.

Methods: A systematic review of the evidences from randomized trials and observational studies where a prophylactic intervention were compared with a control arm in patients with a normal ejection fraction and no past history of heart failure. The primary outcome is to provide evidences on the decrease in ejection fraction (EF). Risk ratio (RR) with 95% confidence interval (CI) was calculated. The statistical significance of the pooled RR will be examined by the Z-test. Inter-study variations and heterogeneities will be estimated using Cochran's Q-statistic with $P < 0.05$ indicating a statistically significant heterogeneity. The I index was $> 50\%$, the random effects model using the Mantel-Haenszel method was used. The Review Manager (RevMan) [Computer program]. Version 5.3. Copenhagen was used as software program.

Results: LVEF function at post-chemotherapy showed that among the three studies, the average change in the LVEF function exposed to the trial interventions were as follows, an increased mean=0.50, sd=3.4 in Cardinale et al (2006), decreased of mean 1.3, sd= 7.3 in Georgakopoulos et al (2010), and a decrease of mean = 0.17, sd= 5.1 noted in Bosch et al 2013. In comparison to placebo group, the notable high decreases in LVEF function were as follows, -3.28 (sd=6.3), -14.5 (sd=5.7), and 1.00 (sd=6.9). Those patients in placebo group had higher depression in their LVEF measurements at post-chemotherapy, thus, indicating they experienced clinical signs of cardiotoxicity. The overall difference between groups was highly statistically significant ($z=7.50$, $p < 0.00001$), meanwhile, due to limited studies involved in the analysis, the homogeneity of results was not yet achieved ($I^2=96\%$, $p < 0.001$).

Conclusion: A higher average depression of LVEF in the placebo group, thereby indicating that the trial or intervention (prophylactic) therapy showed evidence of cardioprotective effect.

Limitation of the study: This systematic review was limited on the evidences from randomized trials and observational studies where a prophylactic intervention was compared with a control arm in patients with a normal ejection fraction and no past history of heart failure. Also, sources were limited on subscription free journals, and those which reported the outcome of interest.

Keywords: Cardioprotective, Cardiotoxicity, Anthracyclines

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BACKGROUND: Hypertension in pregnancy remains to be a leading cause of maternal and fetal morbidity, particularly when the elevated blood pressure (BP) is due to preeclampsia, either alone (pure) or “superimposed” on chronic vascular disease. Calcium channel antagonists have been used to treat chronic hypertension, mild preeclampsia presenting late in gestation, and urgent hypertension associated with preeclampsia. Most investigators have focused on the use of nifedipine, although there are reports of nicardipine, isradipine, felodipine, and verapamil. Although used in pregnancy, the dihydropyridine amlodipine is yet unstudied in this population. Maternal adverse effects of the calcium channel blockers include tachycardia, palpitations, peripheral edema, headaches, and facial flushing. Short-acting dihydropyridine calcium antagonists, particularly when administered sublingually, are now not recommended for the treatment of hypertension in non-pregnant patients because of reports of myocardial infarction and death in hypertensive patients with coronary artery disease. Administration of short-acting nifedipine capsules has been, in case reports, associated with maternal hypotension and fetal distress.

OBJECTIVE: The objective of this meta-analysis is to summarize evidences of the efficacy of calcium channel blockers for the pregnant hypertensive.

METHODS: Relevant studies published from 2000-2018 were identified by electronic searches in PubMed, Cochrane, and International Journal of Cardiology: Open Access, databases using the following terms: (safety and efficacy of calcium channel blockers for the pregnant hypertensive). The risk ratio (RR) with 95% confidence interval (CI) was calculated. Inter-study heterogeneities was estimated using Cochran's Q-statistic with $P < 0.05$ indicating a statistically significant heterogeneity. The data was processed using statistical software program, namely, Review Manager (RevMan) Version 5.3. Copenhagen.

RESULTS: The overall rate of hypertension among pregnant women as reported by the six studies was 27/227 (11.9%) as compared to those in control group with hypertension rate of 48/227 (21.1%). The summarized computed risk ratio between groups was $RR = 0.57$ CI 0.37-0.86). In the analysis, the risk ratio of 0.25 indicated that the calcium channel blocker demonstrated as a protective agent of hypertension to develop, thus, preventing or reducing the risk of developing hypertension among women during pregnancy. Furthermore, meta-analysis showed that the overall effect among the six studies was statistically significant ($z = 2.64$, $p = 0.008$) and the reported heterogeneity was not significant ($p = 0.500$) implying that the majority of the studies (5/6 journals) reported the significant protective effect of calcium channel blockers as effective drug therapy during pregnancy.

CONCLUSION: Maternal calcium channel blocker exposure during late pregnancy is effective in reducing or preventing hypertension during pregnancy. Thus, further systematic review is needed to test whether neonatal seizures and other neonatal complications are associated with calcium channel blockers and its confounding factors.

LIMITATION OF THE STUDY: This study was focused on the efficacy of calcium channel blocker exposure of women during pregnancy. Thus, analysis was limited on such primary parameter. Further study is recommended, on the safety and neonatal effects of this treatment during pregnancy is warranted.

Keywords: Calcium Channel Blockers, Hypertension, Pregnant

Cell proliferative effect of *Bauhinia malabarica* on Human Lymphocyte

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Aetas from the Pinatubo Mountain have been dependent on the forests for their needs like pharmaceutical and dietary needs. After the eruption of Pinatubo Mountain in 1991, the Aeta communities were forced to the lowlands and recently have returned to the mountain as the devastation of eruption was over. The eruption has caused a changed in the forestry and ecosystem. One the plant materials used by Aetas for pharmaceutical needs is *Bauhinnia malabarica* plant commonly known as Alibangbang (Ragragio, Zayas, & Obico, 2013). This research investigated the cell proliferative effect of the methanolic extract of *Bauhinia malabarica* on human lymphocytes. *Bauhinia malabarica* leaves were extracted using methanol as solvent by means of maceration. Phytochemical screening was performed to qualitatively asses the biological compounds present in the extract. MTT assay was utilized to establish the cytotoxic potential of *Bauhinia malabarica* by measurement of cell viability. Varying concentrations of *Bauhinia malabarica* leaf methanol extract (100ug/uL, 50ug/uL, 25ug/uL and 12.5ug/uL) was used determine the cell viability. The absorbances brought upon by the metabolic activity exhibited by the viable cells due to the reduction activity in the mitochondria of the cell. It is seen that as the concentration of the *Bauhinia malabarica* extract increases, the value of the absorbances increases. This signifies that the extract was able to preserve the human lymphocyte and hastens metabolic activity of the viable cells and suggestive of two possibilities;

(1) Proliferation of cells happened due to the presence of β -sitosterol or (2) there is an increased reduction activity because of the quercitin compound. It was found that there is sufficient evidence to prove that there is a significant difference between human lymphocytes treated with Triton X-100 and human lymphocytes treated with *Bauhinia malabarica* leaf methanol extract. The p-value of experimental group obtained from one way ANOVA was 0.0001 thus establishing the evidence that there is a significant difference. Tukey's test was also used to solely assess the difference between variations. *Bauhinia malabarica* leaf methanol extract is considered a non-toxic agent against human lymphocytes and established as a cell proliferative agent.

Keywords: β -sitosterol, mitogen, Alibangbang, quercitin, cell viability

Intravenous (IV) Monitoring and Refilling System

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This study focused on designing an intravenous (IV) therapy monitoring and refilling system to monitor IV therapy and notify medical personnel for abnormal drip rate and refill IV bag when near empty. The system has portable receiver and transmitter devices. It uses Radio Frequency (RF) medium which is used for transmitting and receiving of the current status data of the monitoring and notifying system. The system has also fiber optic sensors for sensing and counting the drip rate of the IV bag. The control panel of the system is placed on the transmitter. The main purpose of the monitoring system is to process an accurate IV therapy and to prevent possible backflow of the blood by stopping the IV set attached to the system.

Keywords: Drip Rate, Fiber Optic Sensor, Intravenous, Monitoring System, Refilling System