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Editorial Note

In recent years, stem cell therapy has become a very promising subject of scientific research. The development of treatment methods using stem cells has raised great hopes for the medical world. A stem cell can renew itself, proliferate, and differentiate to be various types of specialized cells. This potency is digging up by researchers, especially those who work in the regenerative medicine field, to make stem cells as a source in cell therapy.[1] One more potency that also draws people attention is the use of stem cells to cancer therapy. Some researchers report that stem cell can migrate towards cancer cell, secrete growth factor and some cytokines able to play a role as immunosuppressive and anti-tumor.[2]

Cancer research is very important especially for diagnosing as early as possible. Some of the research tries to find the therapy of breast cancer using the stem cell. Breast cancer is a heterogeneous disease which consists of various type of cells including cancer stem cells. Some other studies try to find the treatment and prevention of colorectal cancer naturally by consuming leaves extract of Annona muricata L. (soursop). Soursop is known for many phytochemical components that serve as an anti-cancer. Colorectal cancer is the world's third most prevalent cancer, which 30% of cases are rectal cancer.[3] Researcher also tries to find the potential prognostic biomarker for colorectal cancer such as MiR-124-3p. The infection of Human papillomavirus (HPV) is also important since HPV is the major cause of cervical cancer. Since cervical cancer caused by the virus, research to find the vaccine to prevent the HPV infection is challenging.

Beside cancer, communicable disease is also still a problem, such as HIV infection in children. HIV infection in children is almost always obtained from the mother. More than 95% of children infected with HIV in the United States get an infection from their mother, either before or around the time of birth (called vertical transmission or mother-to-child transmission).[4] The HIV-AIDS treatment is a lifelong treatment so that the continuity of treatment affects the outcome of treatment. The treatment of HIV infected children is a challenge to their caregiver due to many existing problems related to their health.

Indonesia faces the burden of nutrition related diseases as obesity is increasing while malnutrition still exists, including in adolescents. Issues of obesity among adolescents have been rising recently in most of the world including less developed countries. Obesity is a risk factor for cardiovascular disease and can significantly increase morbidity and mortality. Kusumawardani's research found that insufficient intake of fruit and vegetable were not significantly related to obesity in adolescent while consumed fast food was significantly related to obesity. Consuming fast food one or more days per week in adolescents can be lead to a higher risk of overweight and obesity among adolescents. These results are in accordance with the results of research conducted by researchers in several countries.

Communicable and non-communicable diseases still become a problem in all countries. Non-communicable diseases (NCDs), also known as chronic diseases such as cancers and cardiovascular diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioral factors such as unhealthy diets and a lack of physical activity. Therefore it is important to develop an action plan for the prevention and control of communicable and non-communicable diseases.

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WP 870

Syarifah Dewi, Mohamad Sadikin, Muchlis Ramli, Septelia Inawati Wanandi

HDAC2 and PCNA expression is correlated to decreasing of endoxifen sensitivity in human breast cancer stem cells ALDH+

Health Science Journal of Indonesia 2019;10;77-81

Latar belakang: Sel punca kanker payudara (breast cancer stem cells/BCSC) adalah subpopulasi sel kanker yang memiliki kemampuan menghasilkan tumor baru dan bersifat seperti sel punca. Penelitian kami sebelumnya menggunakan jaringan kanker payudara mengungkapkan bahwa ekspresi gen histone deacetylase 2 (HDAC2) dan proliferating cell nuclear antigen (PCNA) ditemukan perbedaan signifikan setelah terapi neoajuvan hormon dan kemoterapi. Penelitian ini bertujuan untuk menganalisis hubungan antara ekspresi HDAC2 dan PCNA dengan kelangsungan hidup sel punca kanker payudara dengan penanda aldehyde dehydrogenase + (ALDH+) yang diberi perlakuan endoksifen.

Metode: Sampel adalah BCSC primer manusia ALDH+ yang diberi perlakuan endoksifen 4 uM masing-masing selama 2, 4, 6, 8, 10, 12, 14 hari. Viabilitas sel dilihat dengan menggunakan trypan blue dan ekspresi mRNA HDAC2 dan PCNA ditentukan menggunakan qRT-PCR.

Hasil: Viabilitas BCSCs ALDH + menurun setelah 2 sampai 4 hari pemberian endoksifen. Pada periode ini juga didapatkan ekspresi mRNA HDAC2 dan PCNA mengalami penurunan. Tetapi setelah pemberian endoksifen selama 8 hari, viabilitas BCSCs ALDH + mengalami peningkatan dan ditemukan peningkatan yang signifikan pada hari ke-14 pemberian endoksifen. Ekspresi mRNA HDAC2 dan PCNA juga menunjukkan peningkatan mulai pada hari ke-8 dan terus meningkat hingga hari ke-14 pemberian endoksifen. Penelitian ini menunjukkan pola yang sama antara ekspresi mRNA HDAC2 dan PCNA dan viabilitas sel.

Kesimpulan: Induksi endoksifen yang lama menurunkan sensitivitas efek endoksifen pada BCSC manusia dan ekspresi HDAC2 dan PCNA berkorelasi dengan viabilitas BCSC manusia setelah induksi endoksifen.

Kata kunci: sel punca kanker payudara, viabilitas sel, HDAC2, PCNA, endoksifen

QW 166

Silvia Tri Widyaningtyas, Sofy Meilany, Budiman Bela

Cloning and expression of Human Papilloma virus type 16 L1 capsid protein in bacteria

Health Science Journal of Indonesia 2019;10; 82-89

Latar belakang: Secara alamiah protein kapsid L1 Human Papillomavirus (HPV) tipe 16 dapat mengalami auto assembly untuk membentuk Viral like particle (VLP). Terkait dengan penelitian vaksin HPV, VLP dapat digunakan untuk berbagai keperluan seperti vaksin, pseudovirion atau SpyTag-Spycatcher. Penelitian ini ditujukan untuk mendapatkan plasmid rekombinan yang digunakan untuk produksi protein L1 HPV 16.

Metode: Gen penyandi protein L1 HPV 16 diklona ke dalam vector pQE80L, suatu plasmid yang mengandung sistem ekspresi untuk prokariota. DNA penyandi HPV 16 L1 disisipkan pada situs restriksi BamHI dan Hind III plasmid pQE80L. Plasmid rekombinan yang mengandung gen L1 HPV 16dikonfirmasi menggunakan PCR dan analisis enzim restriksi. Lebih lanjut untuk memastikan bahwa gen rekombinan L1 HPV 16 dapat diekspresikan dalam prokariota, plasmid rekombinan ditransformasikan ke bakteri Escherichia coli BL21 (DE3). Bakteri diinduksi dengan Isopropyl β-D-1-thiogalactopyranoside (IPTG) dengan berbagai konsentrasi dan berbagai waktu inkubasi.

Hasil: protein rekombinan L1, berat 56 kDa, telah berhasil diekspresikan dalam sistem prokariota.

Protein rekombinan L1 dapat dimurnikan menggunakan Talon^{R} dalam kondisi denaturasi. **Kesimpulan:** gen L1 HPV 16 telah dikloning ke dalam pQE80L dan berhasil diekspresikan dalam sistem prokariota.
Kata kunci: L1, HPV 16, cervical cancer

WI 529

Sri Nuryani Wahyuningrum, Christina Hari Nawangsih Priharsanti, Sofia Mubarika Haryana, Ahmad Ghozali

Increasing serum miR-124-3p expression is associated with the high survival rate of a rectal cancer patient after neoadjuvant chemoradiotherapy

Health Science Journal of Indonesia 2019;10;90-95

Latar Belakang: Kanker kolorektal menempati urutan ketiga penyebab kanker di dunia, dengan prevalensi kanker rektum sebanyak 30% dari total kasus. Saat ini belum ada biomarker yang efektif untuk memprediksi respon pasien terhadap terapi yang diberikan. Beberapa penelitian menggunakan potensi miRNA sebagai biomarker untuk melihat respon terapi. Salah satunya yaitu MiR-124-3p berperan sebagai tumor supresor yang mengalami penurunan ekspresi pada berbagi jenis kanker. Tujuan dari penelitian ini adalah untuk meneliti ekspresi miR-124-3p dari pasien kanker rektum yang menerima nCRT, dan menganalisis hubungannya dengan kelangsungan hidup pasien dan parameter klinis lainnya.

Metode: Penelitian ini melibatkan 15 orang pasien yang didiagnosis menderita kanker rektum lokal dan menjalani kemoradioterapi neoajuvan (radioterapi 45-50 Gy dengan fraksi 1,8-2 Gy selama 1-3 bulan, dan kemoterapi 5-fluororacil secara oral). Sampel penelitian berupa darah intravena sebanyak 5 ml diambil saat sebelum dan sesudah kemoradioterapi. Selanjutnya ekspresi miR-124-3p dianalisis menggunakan qRT-PCR dan dikalkulasi menggunakan metode Livak.

Hasil: Terdapat hubungan signifikan antara peningkatan ekspresi miR-124-3p dengan sintasan hidup pasien (P=0,003; OR =30, 95% CI = 1,41 – 638,15), serta adanya peningkatan ekspresi miR-124-3p yang signifikan (P<0,041, *fold change* sebelum=1,14 ± 1,25; sesudah=2,4 ± 1,84) setelah dilakukan kemoradioterapi

Kesimpulan: Hasil ini mengindikasikan bahwa miR-124-3p berpotensi menjadi biomarker untuk memprediksi sintasan hidup pasien kanker rektum yang menerima kemoradioterapi.

Kata kunci: kanker rektum, kemoradioterapi, miR-124-3p, sintasan hidup

WI 529

Murdani Abdullah, Debby Desmarini, Sofy Meilaini, Puji Sari, Luluk Yunaini, Fadilah Fadilah

The effect of ethanolic leaves extract of soursop (Annona muricata L.) on human colorectal cancer cell line: cell viability and in silico study to cyclin D1 protein

Health Science Journal of Indonesia 2019;10;96-102

Latar Belakang: Kanker kolorektal merupakan transformasi patologis dari epitel kolon dan rektum normal menjadi massa jaringan abnormal, perubahan ini terjadi karena ekspresi berlebih dari protein cyclin D1 yang menginduksi proliferasi sel kolorektal secara berlebihan. Pengobatan dan pencegahan kanker kolorektal dapat dilakukan secara alami dengan mengonsumsi ekstrak daun Annona muricata L. (sirsak). Sirsak dikenal karena banyak komponen fitokimia yang berfungsi sebagai anti kanker.

Metode: Penelitian ini menggunakan sel kanker kolorektal HT-29 yang diberi ekstrak etanol daun sirsak dan 5-Fluorourasil (5-FU). Tujuannya untuk menemukan konsentrasi sitotoksisitas yang dapat menghambat 50% populasi sel HT-29 (CC50) dan konsentrasi yang didapat sebelumnya akan diuji dengan metode uji MTT . Analisis docking molekuler dilakukan antara molekul-molekul dari ekstrak etanol daun sirsak terhadap protein Cyclin D1 menggunakan perangkat lunak molecular operating environment (MOE) 2013.08.

Hasil: CC50 ekstrak etanol daun sirsak adalah 278 µg / mL dan 5-FU adalah 88 µg / mL. Persentase terendah sel HT-29 yang layak adalah 2 x CC50 setelah perlakuan ekstrak etanol daun sirsak (40,4 ± 1,3%) dibandingkan dengan 5-FU (52,8 ± 4,3%), kontrol pelarut (97,2 ± 1,4%), dan kontrol sel (100%). Analisis docking molekuler untuk protein cyclin D1 diperoleh asam N-hexadecanoic dan molekul phytol sebagai kandidat yang baik untuk menghambat protein cyclin D1.

Kesimpulan: Ekstrak etanol daun sirsak dapat menurunkan viabilitas sel kultur kanker kolon HT-29 dan berdasarkan analisis molekular docking dilihat dari energi bebas gibbs (ΔG) dan afinitas tertinggi (pKi) diperoleh N-hexadecanoic dan molekul phytol sebagai penghambat protein cyclin D1

Kata Kunci: kanker kolorektal HT-29, ekstrak etanol daun sirsak, viabilitas sel, molecular docking, cyclin D1

QW 168.5.H6

Yuyun Yuniar, Rini Sasanti Handayani

Challenges and social support provisions in the treatment of HIV infected children in Indonesia

Health Science Journal of Indonesia 2019;10;103-110

Latar belakang: Pengobatan pada anak yang terinfeksi HIV merupakan tantangan bagi para orang tua/pengasuh karena berbagai permasalahan menyangkut kesehatan mereka.

Metode: Penelitian untuk mengeksplorasi pengalaman dan dukungan social pada pengobatan anak terinfeksi HIV dilakukan di 5 provinsi di Indonesia dengan prevalensi HIV tertinggi. Total sampel anak sebanyak 239 orang dari sejumlah 267 orang yang direncanakan. Data dikumpulkan dengan wawancara semi terstruktur dengan orang tua/pengasuhnya. Analisis dilakukan terhadap 165 anak berusia 1-14 tahun yang telah mendapatkan terapi obat antiretroviral.

Hasil: Dari sejumlah 165 anak, sebanyak 63,6% anak mengkonsumsi 1-2 item obat dan 36,4% mengkonsumsi 3-5 item. Efek samping yang paling sering terjadi adalah kulit kemerahan, mual dan muntah. Kesulitan yang paling sering dihadapi adalah rasa bosan dan anak mempertanyakan minum obat pada kelompok anak yang berusia 5-14 tahun. Orangtua/pengasuh berusaha melanjutkan pengobatan dengan mengingatkan jadwal minum obat, membujuk, memberikan penjelasan bahkan memaksa atau mengancam mereka untuk minum obat. Kesulitan tersebut makin bertambah seiring meningkatnya usia anak. Dukungan yang paling sering berasal dari orang tua dan keluarga besar seperti nenek atau paman, khususnya untuk anak yang sudah yatim.

Kesimpulan: Pemahaman hambatan pengobatan pada anak terinfeksi HIV dapat membantu untuk menyediakan intervensi yang tepat untuk meningkatkan kepatuhan yang akan mendorong kesuksesan terapi mereka.

Kata kunci: anak terinfeksi HIV, antiretroviral, dukungan sosial, pengobatan, kesulitan

WQ 200

Serawati Dewi, Yuni Romalita, Yusriani, Muhammad Khidri Alwi

Perceptions of pregnant woman on monetary and time sacrifice for satisfaction based on health workers roles in antenatal services to reduce the risk of maternal death at Gowa district

Health Science Journal of Indonesia 2019;10;111-118

Latar belakang: Angka Kematian Ibu (AKI) merupakan salah satu indicator pembangunan kesehatan di Indonesia. Upaya percepatan penurunan AKI dapat dilakukan dengan menjamin agar setiap ibu mampu mengakses pelayanan kesehatan ibu hamil yang berkualitas. Apabila antenatal care dimanfaatkan dengan baik maka kesehatan ibu dapat terpantau secara berkesinambungan dari masa kehamilan sampai dengan persalinan.

Metode: Desain penelitian adalah observasional dengan rancangan cross sectional study. Populasi pada penelitian ini adalah semua ibu hamil yang memiliki usia kehamilan 7-9 bulan di Kabupaten Gowa sebanyak 122 orang. Sampel sebanyak 93 orang diambil dengan menggunakan teknik accidental sampling.

Hasil: Ibu hamil yang memiliki persepsi pengorbanan moneter kecil dan mengatakan peran petugas kesehatan kurang dalam pelayanan antenatal sebanyak 90,0%. Ibu hamil yang memiliki persepsi pengorbanan moneter sangat kecildan mengatakan peran petugas kesehatan kurang sebanyak 83.1%. Ibu hamil yang memiliki persepsi pengorbanan waktu besar dan mengatakan peran petugas kesehatan kurang dalam pelayanan antenatal sebanyak 100%. Ibu hamil yang memiliki persepsi pengorbanan moneter besardan mengatakan peran petugas kesehatan kurang dalam pelayanan antenatal sebanyak 90.2%.

Kesimpulan: Kepuasan ibu hamil terhadap peran petugas kesehatan dalam pelayanan antenatal berdasarkan persepsi pengorbanan moneter tidak menunjukkan korelasi sedangkan berdasarkan pengorbanan waktu menunjukkan ada korelasi.Perlu meningkatkan kecepatan proses pelayanan pemeriksaan kehamilan pada ibu hamil oleh tenaga kesehatan.

Kata kunci: pelayanan antenatal, ibu hamil, pengorbanan, waktu, moneter

WD 210

Nunik Kusumawardani, Anissa Rizkianti, Rofingatul Mubasyroh, Prisca Petty Arfines, Tities Puspasari.

Adolescents school students in Java and Sumatra are in greater risk of obesity

Health Science Journal of Indonesia 2019;10;119-127

Latar belakang: Indonesia masih menghadapi beban ganda masalah gizi berkaitan dengan obesitas yang meningat sementara masalah kurang gizi masih terjadi, termasuk pada remaja. Hasil penelitian masih terbatas, dalam hal aspek demografi dan geografi di Indonesia, sementara strategi pencegahan obesitas pada remaja membutuhkan intervensi yang lebih optimal. Tujuan: Studi ini bertujuan untuk memberikan gambaran masalah obesitas berdasarkan karakteristik populasi dan perilaku berisiko di region yang berbeda.

Metode: Studi ini menggunakan data sekunder dari survei kesehatan berbasis sekolah tahun 2015 yang dikembangkan oleh CDC Amerika dan WHO, dengan modifikasi sesuai kondisi Indonesia. Analisis mencakup 10,544 pelajar kelas 7 – 12 dengan representasi populasi nasional di tiga regional/pulau di Indonesia. Uji statistik yang digunakan adalah chi-square dan log regression.

Hasil: Model logistik menunjukkan pelajar remaja yang tinggal di pulau Jawa mempunyai risiko yang lebih tinggi untuk mengalami obesitas (adjusted OR 2.1;95%CI 1.3-3.3) dibandingkan pada pelajar yag tinggal di pulau Sumatra dan luar pulau Jawa dan Sumatra, sementara perilaku berisiko seperti aktivitas fisik dan perilaku diet tidak menunjukkan hubungan yang bermakna dengan kejadian obesitas.

Kesimpulan: Disparitas masalah obesitas terjadi pada remaja di tiga pulau besar di Indonesia, di tingkat kelas yang berbeda dan perilaku diet berisiko yang berbeda. Strategi pencegahan diperlukan lebih mengarah pada intervensi berbasis sekolah dengan memperhatikan faktor geografis tempat tinggal di pulau Sumatra dan lainnya serta tingkat atau kelas yang berbeda.

Kata kunci: obesitas, remaja, perilaku diet, region, aktivitas fisik

QU 86

Amelya Augusthina Ayusari, Budiyanti Wiboworini, Kusmadewi Eka Damayanti, Dwi Rahayu, Widardo, Yulia Lanti, Pandit Adhitya Krisna, Muhammad Thoriqurrohman, Aning Hana Faniya, Fina Rahmatul Ummah

Correlation between dietary fat consumption with body mass index and body composition (a preliminary study in community based)

Health Science Journal of Indonesia 2019;10;128-131

Latar Belakang: Sejumlah penelitian menunjukkan hubungan antara konsumsi lemak dengan indeks massa tubuh dan komposisi tubuh. Penelitian ini bertujuan untuk mengetahui hubungan antara konsumsi harian lemak total, asam lemak tak jenuh ganda (PUFA) dan kolesterol total dengan beberapa paramater gizi.

Metode: Penelitian ini merupakan studi cross-sectional, dengan 102 subjek. Pemeriksaan yang dilakukan adalah tinggi badan, berat badan, indeks massa tubuh dan pengukuran komposisi tubuh menggunakan timbangan komposisi tubuh Omron® HBF-212. Analisis konsumsi lemak total, asam lemak tak jenuh ganda dan kolesterol total menggunakan Software nutrisurvey 2007. Uji korelasi yang digunakan adalah Spearman Rho dengan menggunakan SpSS 21.

Hasil: Konsumsi lemak total tidak berhubungan dengan indeks massa tubuh, massa lemak total, dan massa lemak visceral. Konsumsi PUFA berhubungan secara negatif dengan indeks massa tubuh (p <0,014, -0,24) dan massa lemak total (p <0,001, -0,326), sedangkan konsumsi total kolesterol total berhubugan secara negatif dengan indeks massa tubuh (p <0,019, -0,23), dan massa lemak total (p <0,001, -0,337).

Kesimpulan: Ada hubungan antara konsumsi lemak dengan indeks masa tubuh dan komposisi tubuh.

Kata kunci: konsumsi lemak; indeks massa tubuh; komposisi tubuh

WH 400

Novi Silvia Hardiany, Sucitra, Reni Paramita

Profile of malondialdehyde (MDA) and catalase specific activity in plasma of elderly woman

Health Science Journal of Indonesia 2019;10;132-136

Latar belakang: Malondialdehida (MDA) merupakan petanda stres oksidatif yang merupakan produk akhir dari reaksi berantai proksidasi lipid. Untuk mencegah stres oksidatif, tubuh mensintesis katalse, suatu enzim antioksidan endogen yang mengkatalisis hidrogen peroksida (H2O2) menjadi air dan oksigen. Sampai saat ini kadar MDA dan katalse pada populasi usia lanjut (usila) masih memberikan hasil yang bervariasi dan kadar tersebut pada kelompok usia yang berbeda dalam populasi usila belum pernah dilaporkan. Dengan demikian, penelitian ini bertujuan untuk menganalisis profil kadar MDA dan aktivitas spesifik katalase pada plasma populasi usila berdasarkan peningkatan usia.

Metode: Penelitian ini menggunakan 60 subjek wanita usila sehat yang tinggal di Jakarta. Subjek dibagi dalam 2 kelompok berdasarkan kategori usia, kelompok yang lebih muda (60 – 70 tahun) dan kelompok yang lebih tua (> 70 tahun). Kadar MDA dan aktifitas spesifik katalse dianalisis pada plasma dengan spektrofotometer.

Hasil: Kadar MDA pada kelompok yang lebih muda (60 – 70 tahun) sedikit lebih tinggi dibandingkan kelompok yang lebih tua (> 70 tahun) namun tidak bermakna secara statistik. Selain itu, akitivitas spesifik katalse pada kelompok yang lebih muda lebih rendah bermakna dibandingkan dengan kelompok yang lebih tua.

Kesimpulan: Tidak ada perbedaan bermakna kadar MDA plasma pada populasi usila. Namun, aktivitas spesifik katalase meningkat bermakna seiring dengan pertambahan usia.

Kata kunci: malondialdehida, katalase, wanita usila

WH 300

Elida Marpaung, Pustika Amalia Wahidiyat, Stephen Diah Iskandar, Anastasia Michelle Pratanata

The safety of kidd-incompatible blood transfusion in a restricted setting: a case report

Health Science Journal of Indonesia 2019;10;137-139

Latar belakang: Protein Kidd merupakan transporter urea pada sel darah merah. Walaupun jarang, adanya antibodi terhadap antigen ini dapat menyebabkan reaksi transfusi dan *hemolytic disease of the newborn*. Keberadaan Anti-Jk^{a} and anti-Jk^{b} cukup sulit untuk ditemukan pada uji kecocokan pre-transfusi. Studi ini melaporkan kasus inkompabilitas Kidd yang mendapat darah dengan kadar ketidak-cocokan terendah pada kondisi dimana transfusi sangat dibutuhkan.

Penyajian Kasus: Wanita, 36 tahun, G4P3A0, datang dengan perdarahan vaginam sejak sebulan terakhir. Dari hasil pemeriksaan USG, didapatkan adanya mola hidatidosa. Pasien memerlukan terapi kuret segera setelah anemia pasien terkoreksi (Hb 8.3 g/dL). Uji kecocokan pre-transfusi menunjukan hasil *Coombs test* positif dan ditemukan Anti-Jk^{a} dan Anti-Jk^{b} dari skrining antibodi dengan uji gel dan salin 20^{o}C. Dari setidaknya 50 kantong darah yang dilakukan uji kecocokan, tidak ditemukan darah yang kompatibel sehingga pasien akhirnya ditransfusi menggunakan darah yang paling kompatibel (kadar aglutinasi level 2). Demam dan pruritus dilaporkan dalam 24 jam setelah transfusi, dan membaik setelah pemberian injeksi difenhidramin, deksametason, dan parasetamol.

Kesimpulan: Transfusi dengan adanya inkompabilitis Kidd antigen memiliki risiko tinggi menyebabkan reaksi transfusi hemolitik. Skrining untuk fenotip Jk-null pada keluarga inti dapat membantu ketika tidak ada darah kompatibel yang tersedia. Jika tidak tersedia darah kompatibel pada kondisi yang terbatas, darah dengan tingkat inkompabilitas terendah dapat diberikan jika transfusi dibutuhkan. Pemantauan post-transfusi sampai 1 minggu setelahnya perlu dilakukan untuk memastikan reaksi transfusi yang mungkin timbul.

Kata kunci: reaksi transfusi, inkompatibilitas, kelompok darah Kidd

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WP 870

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HDAC2 and PCNA expression is correlated to decreasing of endoxifen sensitivity in human breast cancer stem cells ALDH+

Health Science Journal of Indonesia 2019;10;77-81

Background: Breast cancer stem cells (BCSCs) are subpopulation of cancer cells that has the ability to generate new tumor and similar properties to stem cell. Our previous study using breast cancer patients revealed that gene expression of histone deacetylase 2 (HDAC2) and proliferating cell nuclear antigen (PCNA) were significantly alteration after neoadjuvant hormone and chemotherapy. This study aimed to analyze the correlation between HDAC2 and PCNA expressions with the viability of breast cancer stem cells aldehyde dehydrogenase + (BCSC ALDH+) treated by endoxifen.

Method: Samples are human primary BCSCs ALDH+ that treated with 4 uM of endoxifen for 2, 4, 6, 8, 10, 12, 14 days, respectively. Cell viability was measured using trypan blue exclusion assay and the mRNA expressions of HDAC2 and PCNA were determined using qRT-PCR.

Results: The viability of BCSCs ALDH+ was decreased after 2 days until 4 days-endoxifen treatment. It also demonstrated that mRNA expression of HDAC2 and PCNA were decreased in this period. But after 8 days-endoxifen treatment, the viability of BCSCs ALDH+ was increased. The increasing of viability was higher in 14 days-endoxifen treatment. The mRNA expression of HDAC2 and PCNA also showed increasing begin on 8 days and continued to increase until 14-days endoxifen treatment. We found a similar pattern between HDAC2 and PCNA expression and cell viability.

Conclusion: Prolonge endoxifen treatment decrease sensitivity of endoxifen effect in human BCSC and the expression of HDAC2 and PCNA are correlated to human BCSCs viability after endoxifen treatment.

Keywords: human breast cancer stem cells, viability, HDAC2, PCNA, endoxifen

QW 166

Silvia Tri Widyaningtyas, Sofy Meilany, Budiman Bela

Cloning and expression of Human Papilloma virus type 16 L1 capsid protein in bacteria

Health Science Journal of Indonesia 2019;10;82-89

Background: Naturally Human Papillomavirus (HPV) type 16 L1 capsid protein can auto assemble to form Viral like particles (VLP). Concerning to vaccine development for HPV, VLP can be used for a variety of needs such as a vaccine, pseudovirion or SpyTag-Spycatcher. In this study, to obtain a vector expression that can be used in the production of HPV L1 protein, we cloned gene coding HPV 16 L1 protein into pQE80L a plasmid contains an expression system for prokaryote.

Methods: The DNA coding HPV 16 L1 was inserted at BamHI and Hind III restriction sites of pQE80L plasmid. The recombinant plasmid containing the HPV L1 gene was confirmed using PCR colony and enzyme restriction. Further to ensure the recombinant HPV 16 L1 gene could be expressed in a prokaryote, the recombinant plasmid was transformed into bacteria Escherichia coli BL21 (DE3). The bacteria were induced with IPTG with various concentrations and various incubation time.

Result: L1 recombinant protein, 56 kDa in weight, has successfully been expressed in prokaryote system. L1 recombinant protein can be purified using Talon^{R} under denaturing conditions.

Conclusion: L1 HPV 16 gene has been cloned into pQE80L and successfully expressed in prokaryote system.

Keywords: L1, HPV 16, cervical cancer

WI 529

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Increasing serum miR-124-3p expression is associated with the high survival rate of a rectal cancer patient after neoadjuvant chemoradiotherapy

Health Science Journal of Indonesia 2019;10;90-95

Background: Colorectal cancer is the world's third most prevalent cancer, which 30% of cases are rectal cancer. Today, the effective diagnostic marker to accurately predict clinical outcome patients response to therapy did not found yet. Several research studies have indicated that miRNA potential as a prognostic biomarker. MiR-124-3p plays as tumor suppressor that significantly down-regulated in some cancer and could radiosensitize human colorectal cancer cells. The aim of the study is to investigate the expression of miR-124-3p from rectal cancer patient who receive nCRT, and analyze its association with patient survival and others clinical parameters.

Methods: This research involved 15 patients with histologically confirmed locally advanced rectal cancer (LARC) and received neoadjuvant chemotherapy/nCRT (radiotherapy 45-50 Gy with 1,8-2 Gy fractions over 1 to 3 months and chemotherapy 5-fluorouracil was administered orally). Patient blood (5 ml) were collected from peripheral venous before and after neoadjuvant chemoradiotherapy. miR-124-3p expression was performed using qRT-PCR and calculate using Livak method.

Results: In this study, we found that increasing of miR-124 was significantly associate with high survival of rectal cancer patient (P = 0,003; OR =30, 95% CI = 1,41 – 638,15). Average of miR-124-3p expression increase significantly after nCRT (P<0,041, fold change before=1,14 ± 1,25; after=2,4 ± 1,84).

Conclusion: Our finding suggests that miR-124-3p expression in blood serum was potential as biomarkers to predict rectal cancer patient survival after neoajduvant chemoradiotherapy.

Keywords: rectal cancer, chemoradiotherapy, miR-124-3p, survival

WI 529

Murdani Abdullah, Debby Desmarini, Sofy Meilaini, Puji Sari, Luluk Yunaini, Fadilah Fadilah

The effect of ethanolic leaves extract of soursop (Annona muricata L.) on human colorectal cancer cell line: cell viability and in silico study to cyclin D1 protein

Health Science Journal of Indonesia 2019;10;96-102

Introduction: Colorectal cancer is a pathological transformation of normal colon and rectum epithelial that becomes an abnormal tissue mass, due to the overexpression of cyclin D1 protein that inducing excessive proliferation of colorectal cell. The treatment and prevention of colorectal cancer could be done naturally by consuming leaves extract of Annona muricata L. (soursop). Soursop is known for many phytochemical components that serve as an anti-cancer.

Methods: This study was used HT-29 colorectal cancer cell that treated with ethanolic leaves extract of soursop and 5-Fluorourasil (5-FU) to find the cytotoxicity concentration that can inhibit 50% of HT-29 cell population (CC_{50}) and the next concentrations of them were treated for next treatment with MTT assay. Molecular docking analysis of the compounds of ethanolic leaves extract of soursop to cyclin D1 protein used molecular operating environment (MOE) 2013.08 software.

Results: CC_{50} of ethanolic leaves extracts of soursop was 278 µg/mL dan 5-FU was 88 µg/mL. The lowest percentage of viable HT-29 cell was 2 x CC_{50} after ethanolic leaves extract of soursop treatment (40,4±1,3%) was compared to 5-FU (52,8±4,3%), solvent control (97,2±1,4%), and cells control (100%). Analysis of molecular docking to cyclin D1 protein was obtained N-hexadecanoic acid and phytol molecules as good candidates to inhibit cyclin D1 protein.

Conclusions: The ethanolic leaves extract of soursop could be a good alternative treatment for colorectal cancer and its compounds had ability to inhibit cyclin D1 protein (the highest gibbs free energy (ΔG) and affinity (pKi)).

Keywords: colorectal cancer, ethanolic leaves extract of soursop, cell viability, molecular docking, cyclin D1

QW 168.5.H6

Yuyun Yuniar, Rini Sasanti Handayani

Challenges and social support provisions in the treatment of HIV infected children in Indonesia

Health Science Journal of Indonesia 2019;10;1023-110

Background: The treatment of HIV infected children is a challenge to their caregiver due to many existing problems related to their health.

Methods: A research to explore the experience and social support on the treatment of HIV infected children was conducted in 5 provinces in Indonesia with highest prevalence of HIV. Total children sample was 239 out of previous 267 planned. Data was collected through semi structured interviews with caregivers of the children. The analysis was conducted to 165 children aged 1-14 years old who were on antiretroviral therapy.

Results: Among those 165 children, 63.6% took 1-2 items of medicines and 36.4% took 3-5 items. The most frequent adverse events were skin rash followed by nausea and vomiting. Boredom and questioning were the most frequent difficulties experienced by children aged 5-14 years old. The caregivers attempted to continue the treatment by reminding the children on schedule to take medicines, wheedling, explaining, forcing or even threatening them. The difficulties appeared more as the children grew older. The most frequent supports mainly came from parents, and extended family such as grandmother or uncle especially for orphaned children.

Conclusion: Understanding obstacles in HIV infected children will help to do proper interventions to improve adherence that will lead to successful therapy.

Keywords: HIV infected children, antiretroviral, social support, treatment, difficulties

WQ 200

Serawati Dewi, Yuni Romalita, Yusriani, Muhammad Khidri Alwi

Perceptions of pregnant woman on monetary and time sacrifice for satisfaction based on health workers roles in antenatal services to reduce the risk of maternal death at Gowa district

Health Science Journal of Indonesia 2019;10;111-118

Background: The Maternal Mortality Rate (MMR) is one indicator of health development in Indonesia. Efforts to accelerate the reduction of MMR can be done by ensuring that every mother can access quality maternal health services. Antenatal care is utilized properly, maternal health can be monitored continuously from pregnancy to delivery.

Methods: The study design was observational with a cross sectional study design. The population in this study were all pregnant women who had a gestational age of 7-9 months in Gowa Regency as many as 122 people. A sample of 93 people was taken using accidental sampling technique.

Results: Pregnant women who have a perception of small monetary sacrifice and say the role of the health workers is lacking in antenatal care 90.0%. Pregnant women who have a perception of monetary sacrifice are very small and say the role of health workers is less as much as 83.1%. Pregnant women who have the perception of the sacrifice of big time and say the role of health workers lacking in antenatal care as much as 100%. Pregnant women who have a perception great monetary sacrifice and say the role of health workers is lacking in antenatal care 90.2%.

Conclusion: Satisfaction of pregnant women towards the role health workers in antenatal care based on perception monetary sacrifice does not show correlation while based on time sacrifice shows there is a correlation. Need to increase the speed of the process of pregnancy examination services for pregnant women by health workers.

Keywords: antenatal care, pregnant women, sacrifice, time, monetary

WD 210

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Adolescents school students in Java and Sumatra are in greater risk of obesity

Health Science Journal of Indonesia 2019;10;119-127

Background: Indonesia faces burden of nutrition related diseases as obesity is increasing while malnutrition still exists, including in adolescents. Research are limited in term of which specific demography and geography aspects in Indonesia while stronger strategic intervention to prevent obesity in adolescents is needed. Objective: This study aims to describe proportion of obesity in indifferent adolescents characteristic and eating behaviour in different regions.

Methods: This study used data from Indonesia 2015 Global School-based Health Survey developed by US CDC and WHO) with modification based on Indonesia specific. The analysis included 10,544 students covered national representative and three regions of school students (grade 7 to 12) in Indonesia. Statistical analysis used chi square and log regressions.

Results: The logistic model showed adolescents students living in Java island has significantly higher risk of obesity (adjusted OR 2.1;95%CI 1.3-3.3) compare to their peers in outside Java and Sumatra Island, while behavior risk factors such as physical activity and dietary habit were not significantly associated with obesity.
Conclusion: Issues disparity of obesity in adolescents occurred in the three main Islands in Indonesia, in different school grades and in those with different dietary risk behaviours. Intervention strategy to address adolescents obesity issues will need to be directed toward school-based settings with taking into account specific approaches for students in Sumatra and other main islands in Indonesia as well as specific for junior and senior high school.

Keywords: obesity, adolescents, dietary behaviour, region, physical activity

QU 86

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Correlation between dietary fat consumption with body mass index and body composition (a preliminary study in community based)

Health Science Journal of Indonesia 2019;10;128-131

Background: Studies showed some relation between fat consumption with body mass index and body composition. We conducted a study to investigate relationships between daily consumption of total fat, polyunsaturated fatty acid (PUFA) and total cholesterol with some nutritional parameters.

Methods: This was cross-sectional study, with 102 subjects. The study was examined height, body weight, body mass index and body composition measurements using the Omron® HBF-212 body composition monitor. There was nutrisurvey 2007 to measure total fat, polyunsaturated fatty acid and total cholesterol consumption. We analyzed the correlation by using SpSS 21 (Spearman Rho)

Results: Total fat consumption was not related to body mass index, total fat mass, and visceral fat mass. PUFA consumption was negatively associated with body mass index ($p < 0.014$, -0.24) and total fat mass ($p < 0.001$, -0.326), while consumption of total cholesterol was negatively associated with body mass index ($p < 0.019$, -0.23), and total fat mass ($p < 0.001$, -0.337)

Conclusion: There was a relation between fat consumption with body mass index and body composition

Keywords: fat consumption; body mass index; body composition

WH 400

Novi Silvia Hardiany, Sucitra, Reni Paramita

Profile of malondialdehyde (MDA) and catalase specific activity in plasma of elderly woman

Health Science Journal of Indonesia 2019;10;132-136

Background: Malondialdehyde (MDA) is a marker of oxidative stress as an end product from the chain reaction of lipid peroxidation. In order to prevent oxidative stress, our body synthesizes catalase, an endogenous antioxidant enzyme that catalyzes hydrogen peroxide (H2O2) into water and oxygen. Until now, the level of MDA and catalase in aging population were still varied and those level at different age in elderly population has not been yet reported. Therefore, the purpose of this study was to analyse the profile of MDA level and catalase specific activity in plasma of elderly women based on increasing age.

Methods: This research used 60 healthy elderly women as the subjects living in Jakarta. The subjects were divided into 2 groups based on age category, the younger group (60 – 70 years old) and the older group (>70 years old). MDA and specific activity of catalase were analyzed in plasma using spectrophotometer.

Results: MDA level in the younger group (60-70 years old) was slightly higher than MDA levels in the older group (>70 years old) but it was not significant. Moreover, specific activity of catalase in the younger group was significantly lower than the older group.

Conclusion: There was no difference in MDA level of elderly woman between younger and older group. However, catalase specific activity significantly increased with increasing age.

Keywords: malondialdehyde, catalase, elderly woman

WH 300

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The safety of kidd-incompatible blood transfusion in a restricted setting: a case report

Health Science Journal of Indonesia 2019;10;137-139

Background: Kidd protein is red blood cell's (RBC) major urea transporter. Albeit rare, the presence of antibodies against kidd antigen may cause significant hemolytic transfusion reaction and hemolytic disease of the newborn. Yet, Anti-Jka and anti-Jkb maybe difficult to be discovered in pre-transfusion cross-matches. This paper reported "best-matched" transfusion in a patient with Kidd incompatibility, where PRC transfusion benefit outweighs its risk.

Case Presentation: A 36 years old, G4P3A0 female, came with continuous vaginal bleeding for the past one month before admission. USG revealed hydatidiform mole. She needed immediate curettage following correction of her anemia (Hb 8.3g/dL). She had a positive Coomb's test and was subsequently found to have Anti-Jka and Anti-Jkb through Saline 20oC and gel test. At least 50 blood bags were tested for compatibility and none was a match. She was then transfused with the most compatible blood available (agglutination level 2). Fever and pruritus transpired within 24 hours post transfusion and it resolved following diphenhydramine, dexamethasone, and paracetamol injection.

Conclusion: Incompatible transfusion with Kidd (Jk) antigen foreseeably causes hemolytic transfusion reactions. Screening for Jk-null phenotype in all family members, especially first-degree relatives maybe beneficial in situation where compatible blood is unavailable. In restricted setting, blood transfusion with the lowest level of agglutination is acceptable when transfusion is imperative. Close monitoring for transfusion reaction must be done for at least 7 days post-transfusion.

Keywords: transfusion reaction, incompatibility, Kidd blood group