

# Medical Science

## About the Cover



Survival of preterm neonates resulted in a multitude of morbidities. One of the efforts to decrease this is the use of probiotics. Worldwide many investigators tested a probiotic or another. In the effort to reduce neonatal mortality in Sudan, the author tried three combined probiotics. To my knowledge, worldwide nobody had tested such a combination, no such research in Sudan or in the Arabic World at the moment. The primary objective is to test effect on incidence of feeding intolerance, NEC, sepsis, and death in the study group, compared to the historical cohort of infants of same gestational age groups, not given probiotics. The secondary objective is to test drug tolerability, side effect, prevention of nosocomial infection, and length of hospitalization in the study group. This is a pilot unicentral, longitudinal prospective, hospital – based study, included preterm infants 26 to 37 wks of gestation. Exclusion criteria: severe congenital malformations, GIT defects, refusal of one/both parents. 250,000,000 mixed bacterial units is given orally, OD. Duration of treatment per infant was till maturity. Data analysed by SSPS 20 and manually. The intervention effectively decreased the mortality ( $p < 0.03$ ) and morbidity ( $p < 0.02$ ) and abolished feeding intolerance, is well tolerated, has no adverse effect, and significantly shorten the hospitalization period ( $p < 0.05$ ) (Ref: Suhair A Othman. Probiotics use in a neonatal unit in Port Sudan / Sudan: This combination is effective and should be part of the routine care. *Medical Science*, 2018, 22(89), 18-22).

**Cardiovascular disease: benefits of Tea consumption**

Neil K Agarwal, Prerna Sharma, Shashi K Agarwal

Cardiovascular disease is one of the leading causes of morbidity and mortality worldwide. Fruits and vegetables are known to be cardio-protective. The beneficial role of tea, brewed from the leaves of the evergreen plant, *Camellia sinensis*, has been the subject of increasing scientific investigation. Tea is abundant in beneficial bioactive compounds that exhibit anti-inflammatory, anti-oxidative, anti-platelet, anti-vasoconstriction and anti-proliferative effects. They help attenuate cardiovascular risk factors and reduce cardiovascular events and cardiovascular mortality. This article briefly reviews the evidence based studies confirming this inverse relationship between tea consumption and cardiovascular disease.

*Medical Science*, 2018, 22(89), 1-10RESEARCH

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**Influence of luteinizing hormone receptor gene in the women with PCOS**

Preethi K, Elizabeth Rani Juneius

PCOS – polycystic ovarian syndrome is a reproductive hormonal disorder which is because of the cysts formation in the ovaries after puberty. It is diagnosed by the ultrasound scanning of ovaries. Luteinizing hormone is commonly known as lutropin produced from anterior pituitary which is released by the hypothalamus. The luteinizing hormone receptor gene is responsible for this reproductive syndrome. The main objective of this study is to analyze luteinizing hormone receptor gene in women with PCOS and the case history of PCOS patients by analysing the biochemical characters of total soluble protein, carbohydrates and cholesterol level with determining the hormonal levels of LH, FSH and PROLACTIN of PCOS patients. The blood from the normal women and the women with PCOS were collected with volunteers concern. The levels of Luteinizing hormone, follicle stimulating hormone and prolactin of the collected samples were analyzed by CLIA method (Chemiluminescence immunoassay). The spectrophotometric quantification of total soluble proteins, carbohydrates, cholesterol showed a increase in its levels in women with PCOS as compared with normal woman. Expression of Luteinizing hormone receptor gene was studied by PCR which showed amplified product for the test samples but which was not expressed in the control sample collected from the normal woman.

*Medical Science*, 2018, 22(89), 11-17ANALYSIS

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**Probiotics use in a neonatal unit in Port Sudan / Sudan: This combination is effective and should be part of the routine care**

Suhair A Othman

Survival of preterm neonates resulted in a multitude of morbidities. One of the efforts to decrease this is the use of probiotics. Worldwide many investigators tested a probiotic or another. In the effort to reduce neonatal mortality in Sudan, the author tried three combined probiotics. To my knowledge, worldwide nobody had tested such a combination, no such research in Sudan or in the Arabic World at the moment. The primary objective is to test effect on incidence of feeding intolerance, NEC, sepsis, and death in the study group, compared to the historical cohort of infants of same gestational age groups, not given probiotics. The secondary objective is to test drug tolerability, side effect, prevention of nosocomial infection, and length of hospitalization in the study group. This is a pilot unicentral, longitudinal prospective, hospital – based study, included preterm infants 26 to 37 wks of gestation. Exclusion criteria: severe congenital malformations, GIT defects, refusal of one/both parents. 250,000,000 mixed bacterial units is given orally, OD. Duration of treatment per infant was till maturity. Data analysed by SSPS 20 and manually. The intervention effectively decreased the mortality ( $p < 0.03$ ) and morbidity ( $p < 0.02$ ) and abolished feeding intolerance, is well tolerated, has no adverse effect, and significantly shorten the hospitalization period ( $p < 0.05$ ).

*Medical Science*, 2018, 22(89), 18-22**Assessment of knowledge level of university students about ovarian cancer**

Melike Demir Doğan, H. Gülbahar Aygün, Sema Baskın, Merve Şensoy, Elif Köken

The present study was conducted in order to determine the knowledge levels of female university students about ovarian cancer. The sample was planned to include 2220 students however 1468 students were reached. The data were collected via questionnaire about socio-demographic characteristics of the students and questionnaire involving expressions that measure their knowledge level. Mean age of the students was  $20.78 \pm 1.20$ ; 678 (46.1%) of the students were faculty students, 466 (31.7%) were collage students, and 324 (22.0%) were vocational school students. 874 (59.5%) of the students did not know what ovarian cancer is and 1332 (90.7%) did not receive any education about ovarian cancer. Therefore, 1227 (83.6%) of the students stated that they did not know symptoms of ovarian cancer. The students were determined to have low level of knowledge about ovarian cancer.

*Medical Science*, 2018, 22(89), 23-30

## RESEARCH

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### **The effects of the usage of blood and blood products in open heart surgery patients and the risk of postoperative atrial fibrillation development**

Ali Kemal Gür, Arzu Esen Tekeli, Esra Eker, Mehmet Coşkun Aykaç

The current study explains the relationship between blood and blood-products that are used during surgery and AF. A total of 260 patients who underwent elective isolated coronary artery bypass grafting (CABG) between January 2015 and March 2017 were included in the study, retrospectively. The study subjects were divided into two groups; patients whom we used blood products during surgery (Group I) and patients whom we didn't use blood products during surgery (Group II). In Group I there were 140 patients (54 female, 86 male), in Group 2 there were 120 patients (45 female, 75 male). AF rates, peri-operative and postoperative blood usage rates and preoperative demographic characteristics were recorded and studied in both groups. AF developed in 95 (36%) of 260 patients who underwent isolated coronary bypass surgery. AF developed in 64 (45%) patients in group I and 31 (25%) in group II. The incidence of AF was found to be statistically significantly lower in the group which we the blood products weren't used ( $p > 0,05$ ). There was no significant difference between the groups in terms of smoking habits, chronic obstructive pulmonary disease (COPD), diabetes mellitus (DM) and hypertension (HT). The mean age was  $63.2 \pm 9.2$  years in Group I and  $60.5 \pm 8.3$  years in Group II. Aortic cross clamping (ACK) duration in patients with cardiopulmonary bypass was  $65.2 \pm 33.1$  minutes in Group I, In the Group 2 mean duration was  $59.7 \pm 25.4$  minutes ( $p < 0,05$ ). The mean number of distal anastomoses was  $3.1 \pm 2.3$  in Group I and  $3.5 \pm 2.7$  in Group II ( $p < 0,05$ ). 1 bag of blood and blood products were given to 75 patients (53.5%), 2 bags to 38 patients (27.1%) and 3 bags were given to 27 patients (19.2%). The mean duration of hospitalization in intensive care unit was  $3.2 \pm 1.6$  days in Group I and  $2.1 \pm 1.1$  days in Group II. No mortal cases within the first month were included in the study. The incidence of AF was significantly lower in coronary bypass operations without the usage of blood and blood products during and after the operation. We conclude that limiting the usage of blood and blood products will result in a significant reduction in the incidence of AF.

*Medical Science*, 2018, 22(89), 31-37

## ANALYSIS

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### **When to remove drains after coronary bypass surgery?**

Ali Kemal Gür, Esra Eker, Arzu Esen Tekeli, Mehmet Coşkun Aykaç

Mediastinal and thoracic drains after open heart surgery are a vital preventive measure against postoperative cardiac tamponade. In this study, we investigated when to remove mediastinal and thoracic drains in patients who underwent isolated coronary bypass surgery. A total of 446 patients who underwent elective isolated coronary artery bypass grafting (CABG) in our clinic between January 2015 and March 2017 were enrolled prospectively. Patients were divided into two groups: Group I (the last 24-hour drainage follow-up was under 150 ml) and Group II (last 24 hours drainage follow-up was under 50 ml). There were 210 patients (95 female, 115 male) in Group I and 236 patients (112 female, 124 male) in Group II. Postoperative Tamponade and pleural effusion rates, perioperative and postoperative blood usage rates, and preoperative demographic characteristics were recorded and evaluated statistically. The average age of the patients included in the study was  $59,5 \pm 6,2$ , consisting of 239 male and 207 female patients. There were 210 patients (95 F, 115 M) in group I, 236 patients (112 F, 124 M) in group II. The mean amount of drainage; in Group I:  $582 \pm 123$  ml, in Group II:  $614 \pm 205$  ml. The average time of drain removal; Group I:  $2.3 \pm 0.5$  days, Group II:  $4.1 \pm 0.3$  days. Development rate of cardiac tamponade that required surgery on the first postoperative day; Group I: 5 (2.3%) and Group II: 3 (1.2%) respectively ( $p < 0.05$ ). Thoracentesis was required due to pleural effusion in 11 (5.2%) patients in group I and 6 (2.5%) patients in group II ( $p < 0.05$ ). The overall average age of the patients was  $59.5 \pm 6.2$  and consisted of 239 male and 207 female patients. It can be suggested that drains should not be removed until the drainage amount of the mediastinal and thoracic drains is reduced to 50 ml / day to further reduce the morbidity after isolated coronary bypass surgery.

*Medical Science*, 2018, 22(89), 38-44

## RESEARCH

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### **A comparison between standard triple therapy and sequential therapy for *Helicobacter pylori* eradication in patients with dyspepsia: A randomized clinical trial**

Mosayeb Moradniani, Shiva Shafizadeh, Zohre Mirbeik-Sabzevari, Saleh Azadbakht, Soleiman Jaferian, Mehrdad Mirzaee Roozbahany, Hamidreza Sherkatolabbasieh, Parastoo Baharvand, Mahmoud Bahmani

*Helicobacter pylori* is a common infectious agent and the main cause of gastro-duodenal disorders. The present study aimed to compare the two methods of sequential therapy and standard triple therapy (STT) for the eradication of *Helicobacter pylori*. In this study, 191 patients with *H. pylori* and over the age of 18 years were randomized into two groups. They received either STT (Omeprazole 20mg capsules twice a day, Amoxicillin 1g capsules and Clarithromycin 500mg capsules twice a day for 14 days) or sequential therapy (Omeprazole 20mg capsules twice a day and Amoxicillin 1g capsules twice a day for the first week and Omeprazole 20mg capsules twice a day, Clarithromycin 500mg capsules twice a day, and Metronidazole 500mg tablets twice a day for the second week). The eradication rates of *H.pylori* infection in sequential therapy based on the analysis of intention to treat (ITT) and per protocol (PP) were 73% and 76% respectively. The eradication rates in triple therapy were 65% and 68.4% respectively. There

was no statistically significant difference between the groups ( $P > 0.05$ ). The findings showed that there is no significant difference between the two methods of sequential therapy and triple therapy for *H. pylori* eradication. Future studies with larger sample sizes can be useful in choosing one of the two methods.

*Medical Science, 2018, 22(89), 45-51*

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### **The effect of self-care education based on the Orem's model on depression in patients with B-Thalassemia major: A semi-experimental study**

Jasem Allahyari, Nosratollah Masinaeinezhad, Abdolghani Abdollahimohammad, Mahdiah Poodineh Moghadam, Mozghan Rahnama

Due to the nature of the disease, patients with Thalassemia are prone to depression. Depression reduces individual potential abilities and self-care behaviors. The aim of this study was to determine the effect of self-care education based on the Orem's model on depression in patients with Thalassemia. In this clinical trial, 60 patients with Thalassemia presented to Razi Hospital in Saravan, were randomly divided into control and experimental groups. Children's Depression Inventory (CDI) was used for data collection. The experimental group was trained for 5 sessions, while the control group received routine interventions. After one month, the questionnaires were completed, and the data were analyzed using SPSS 23. The results of this study indicated that the mean depression score in the experimental group, which was 33.93 at the beginning of the research, reduced to 30.03 after the intervention. The mean score of depression in the control group before and after the intervention was 32.36 and 32.76, respectively. Comparison of mean depression score in both groups before and after the intervention showed a significant difference ( $p = 0.015$ ). Self-care education based on the Orem's self-care model had a positive effect on patients' depression. Therefore, it is recommended that nurses consider nursing theories more frequently.

*Medical Science, 2018, 22(89), 52-57*

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### **Group spiritual care impact on resilience of multiple Sclerosis patients in the multiple sclerosis society of Zahedan**

Malihe Rahdar, Mozghan Rahnama, Hossein Shahdadi, Aziz Shahraki Vahed, Mehdi Afshari

Multiple sclerosis is one of the most common worldwide chronic diseases of the central nervous system, which causes various mood symptoms, including low resilience in various aspects of the patient's life. To determine the group spiritual care impact on resilience of multiple sclerosis patients in the multiple sclerosis society of Zahedan. The present research is a clinical trial study in which 96 multiple sclerosis patients covering by MS Patients Community of Zahedan were selected randomly and organized in two Intervention and control groups according to accessible and reliable conditions. Data were collected using a demographic characteristics questionnaire and Conner Davidson Persistence Scale, which completed before and after the intervention. The intervention group was subjected to 5 sessions of group spiritual care during 3 weeks and for the control group only discussed the daily issues. Data were analyzed by SPSS software version 14. Results showed that group spiritual care has a significant positive effect on increasing the resiliency of multiple sclerosis patients ( $P < 0.001$ ). In all resilience dimensions, including qualification and individual competence, tolerance of negative effects and being strong against stress, positive change acceptance, self-control, spiritual effects, there was a significant increase in scores ( $P < 0.001$ ). Group spiritual care can be effective in increasing the resilience of patients with multiple sclerosis in all dimensions. Thus, the use of this type of care is recommended to improve the resilience of these patients.

*Medical Science, 2018, 22(89), 58-64*

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## **ANALYSIS**

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### **The investigation of heparin effect on arterial blood gases analysis**

Mina Pakmehr, Ali Rashki Ghaleno

Arterial blood gases analysis (ABG) is a common test performed in intensive care unit (ICU) of hospitals. In this critical unit, some intruding factors may influence ABG results. Heparin, a common in used anticoagulant, is among one of these interfering factors. In present study, effect of heparin was evaluated on ABG results. In present quasi-experimental study, 200 specimens of arterial blood were drawn from the radial artery. From these, 100 samples were transferred into heparinized syringes (1 ml heparin per 1 ml blood sample), and 100 samples into dry syringes without any anticoagulants. Results of ABG were analyzed by SPSS 16 software. There were significant differences regarding means of pH,  $PCO_2$ ,  $PO_2$ ,  $HCO_3$ , and BE between the two groups. However, no significant difference was observed for  $O_2$  saturation level. Considering the adverse effects heparin on ABG results found in this study, using heparin as an anticoagulant is discouraged. It is advised to minimize using this anticoagulant in clinical procedures.

*Medical Science, 2018, 22(89), 65-69*

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### **Clinical, demographic, and biochemical profile of pediatric diabetic ketoacidosis patients in King Khalid Civilian Hospital, Tabuk**

Mohammad Zubair, Nagwa Gad Mohamed, Marai Al Amri, Shamina Begum, Anwar Al-Balawy, Rana Sokair, Ibrahim Ajwa

The objective of this study was to assess pediatric patients presenting with DKA regarding aspects of demographics, presentation, findings, and management and probable risk factors associated with DKA in Tabuk, Kingdom of Saudi Arabia. A retrospective descriptive study with review of medical records of patients admitted to King Khalid Civilian Hospital from 2013 to 2016. A total of 98 patients were included and divided into two groups with age matched ( $\pm 3$  years): Group "A"=49: previously diagnosed T1DM,

Group B=49: newly diagnosed T1DM. The following data were analyzed: age, sex, weight loss, basic signs & symptoms and severity on admission, blood gas, blood glucose, glycated hemoglobin, and risk factors. The insulin dosage, time of continuous insulin use, volume administered in the expansion phase and in the first 24 h, length of stay, and complications such as electrolyte disturbances, hypoglycemia and cerebral edema were compared between the two groups. Patients in group B were older at admission, with mean-age of 9.5 years, reported more nausea or vomiting, polydipsia, fatigue, and polyuria, and showed more weight loss ( $p < 0.01$ ). This study also observed a higher blood glucose (mean)  $438 \pm 86.2$  mg/dl and mean HbA1c of  $10.3 \pm 2.3$  and longer hospital stay of  $32 \pm 3.4$  days in group B. Significant differences in severity between groups were observed. The study showed that newly diagnosed T1DM children were older at the time admission, high blood glucose level and had longer hospital stay.

*Medical Science, 2018, 22(89), 70-77*

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### **The prevalence of bacterial sensitivity and resistance in non-complicated urinary tract infection in outpatient with urinary tract infection in Kermanshah city**

Zohreh Bartani, Ehsan Shokry, Masoud Sadeghi, Hossein Abdi

Urinary tract infections (UTIs) are one of the most well-known infections in inpatients and outpatients of the Hospital. This study checked the prevalence of bacterial sensitivity and resistance in non-complicated UTIs in outpatients. In this cross-sectional study, the morning urine samples was collected from 600 patients with regard to criteria over 16 years old who referred to the reference laboratories in 2015. The prevalence of UTI was higher in women in contrast men (91/8% versus 8.2%). *Nitrofurantoin* had the most sensitivity (91.3%) and Nalidixic acid had the most resistance (52.7%). There were significant differences between sex with antibiotic sensitivity and resistance for Ciprofloxacin, Cefixime, Co-trimoxazole, and *Nitrofurantoin*. *Escherichia coli* had the most resistance to Nalidixic acid and the least resistance to *Nitrofurantoin*. In the present study, the most sensitivity was to Nitrofurantoin (91.3%) and the most resistant was to Nalidixic acid (52.7%). It is recommended that periodically, every few years and in each region, an antibiotic resistance pattern of pathogens be checked in order to obtain the best drug in the treatment of UTIs.

*Medical Science, 2018, 22(89), 78-84*

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### **Evaluation of academic motivation in medical students of basic and clinical stages in Kermanshah University of Medical Sciences during 2015-2016: a review of Iranian studies**

Mazaher Ramezani, Mina Samadi, Afshin Almasi, Masoud Sadeghi

Motivation is one of the most effective on the performance of students at the university. The aim of study was to evaluate academic motivation in medical students of basic and clinical stages in Kermanshah University of Medical Sciences. In an analytical-descriptive and randomized study on medical students of Kermanshah University of Medical Sciences, 300 students were selected during 2015-2016. Age, sex, residence, marital status, having of doctor in the first and second degree relatives; and grade point were checked in all patients. In this study, the academic motivation scale questionnaire for the measurement of the quality or type of motivation was used. The mean age of students was 22.9 years (range, 18-30 years) that 43.7% were men. There was a significant correlation between marital status ( $P=0.001$ ) and amotivation ( $P=0.004$ ) in two stages. Also, intrinsic motivation and the overall motivation for students of clinical stage in men significantly less than women. Intrinsic motivation for students of basic stage that had a doctor in the second relatives was less compared with students that didn't have a doctor in the second relatives. Extrinsic motivation for students of clinical stage that had a doctor in the second relatives was more compared with students that didn't have. First of all, the academic motivation in this study was similar to other studies in Iran. Second, female students than male students were in a higher motivation level, although, this difference was statistically significant only at the level of amotivation.

*Medical Science, 2018, 22(89), 85-91*

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## RESEARCH

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### **The effect of motor-balance exercise on MS patients' anxiety and fatigue of Zahedan, Iran 2014-2015**

Asadullah Keikhaei, Gholam Hosein Sargazi, Farshid Saedinezhad, Hamed Faghihi, Zeynab Poodineh

Multiple sclerosis (MS) is a progressive and chronic central autoimmune disease of the central nervous system that affects the brain and the spinal cord. MS disturbs the direction of the nervous and electrical currents by destroying the neural cell myelin and forming a specific scar. In addition to physical problems, chronic diseases including MS are responsible for many psychological disorders. The purpose of this study was to investigate the effect of motor-balance exercise on MS Patients' Anxiety and Fatigue of Zahedan, Iran 2014-2015. This is a randomized controlled clinical trial on 60 MS patients diagnosed with MS visiting the MS Center from November 2014 to April 2015. Stratified random sampling was employed and the patients were assigned into two 30-member groups: Group A (Intervention) and Group B (Control). There are three stratifies in each group. Balance exercises are considered the intervention. The questionnaires were forwarded prior to intervention and four weeks after the intervention to assess the anxiety and fatigue. The data were collected by demographic questionnaire, Spielberger State-Trait Anxiety Inventory (STAI), and Brief Fatigue Inventory (BFI). According to the results of the present study, patients with MS before intervention had revealed clear anxiety 53.7% at the moderate level, 9.2% were mild, 35% had severe anxiety, and their hidden anxiety was 14.8% mild, 53.7% moderate and 29.6% severe. After the intervention, participants with MS developed their obvious anxiety from 25.2% before intervention to 14.3%, and their secret anxiety decreased from 29.6 to 2.11. In general, the results showed that balance exercise intervention is possible for MS

patients. The exercise causes a significant difference in anxiety and fatigue so that such intervention contributes to reduced anxiety and fatigue. Therefore, such intervention can have positive effect on anxiety and fatigue symptoms and improve the quality of life.

*Medical Science*, 2018, 22(89), 92-98

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**Biofabrication of silver nanoparticles using *Lactobacillus casei* subsp. *Casei* and its efficacy against human pathogens bacteria and cancer cell lines**

Ashrafi Babaganjeh Leila, Ahangar Parinaz, Leila zarei, kouhkan Mehri

Bio-fabrication of metallic nanoparticles is interesting research field because of its different potential applications in nanomedicine. In the present work, human strain probiotic *Lactobacillus casei* subsp. *Casei* was used as potential bioreductant for the synthesis of silver nanoparticles (AgNPs), its antimicrobial and anticancer properties were evaluated. The synthesized nanoparticles were characterized using UV-visible spectroscopy, Fourier-transform infrared spectroscopy (FT- IR) and Transmission electron microscopy (TEM). Biosynthesized silver nanoparticles were confirmed by color changes and were found to be spherical in shape and well dispersed, with no agglomeration. Antimicrobial and anticancer activities of silver nanoparticles were evaluated against selected pathogens (*Staphylococcus aureus*, *Pseudomonas aeruginosa*) and human gastric carcinoma cells (AGS) and Human Colon Carcinoma cells (HT-29). Results showed that biosynthesized AgNPs had excellent antibacterial activities against *Staphylococcus aureus* and *Pseudomonas aeruginosa* which were observed by well diffusion, minimum inhibitory concentration (MIC) methods. These nanoparticles were able to inhibit proliferation of human cancer cell lines. Ag NPs were shown to promote apoptosis as seen in the acridine orange/Propidium Iodide staining and increase nitric oxide (NO) secretion determined by NO production assay. Our results are promising for potential use of the biosynthesized Ag NPs as an antibacterial and anticancer agent. *Lactobacillus casei* subsp. *Casei* can act as a novel source for AgNPs biosynthesis. This method can be employed for development of new nano-drug formulations in cancer therapy.

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