

## Radiology and Oncology 2017



World Congress on

# RADIOLOGY AND ONCOLOGY

October 19-20, 2017 | New York, USA

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## Poster Presentations

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## Atorvastatin attenuate radiation-induced small intestine damage through downregulation of inflammation-related molecules

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Considering that the underlying characteristics of rapid cell turnover of small intestine epithelial cells, radiotherapy often resulted in small intestine injury, such as apoptosis of epithelium and shortening of villi, when radiotherapy was used for treating abdominal or pelvic cancer. Atorvastatin, a 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitor, is widely used in the clinic for decreasing serum cholesterol. In addition, atorvastatin has many biological effects, including improvements of endothelial function, and reductions of oxidative stress and inflammation. To avoid radiation-induced enteritis, we sought to investigate whether atorvastatin can attenuate radiation-induced early and delayed damage of small intestine. In the present study, C57BL/6 mice were divided into 4 groups: Control; Atorvastatin alone: 30 mg/kg atorvastatin was administered once daily for 5 days; Irradiation (IR) alone: radiation at a dose of 5 Gy was administered once daily for 3 days (abdomen cavity) and Atorvastatin+IR: radiation of 5 Gy was administered once daily for 3 days following administration of atorvastatin for 5 days. The results of the hematology (white blood cells, platelet, and hemoglobin) and biochemical tests (albumin, alanine aminotransferase, creatinine, and lactic dehydrogenase) showed that atorvastatin didn't induce significant difference in mice with IR and Atorvastatin+IR groups. The value of Chiu's injury score and crypt/villi (C/V) ratio were used to assess mucosa damage level, and the results showed that administration of atorvastatin decreased the damage level of atorvastatin+IR group (Chiu's score:  $0.67 \pm 0.58$ ; C/V ratio:  $0.50 \pm 0.07$ ) when compared with IR alone group (Chiu's score:  $3.67 \pm 0.58$ ; C/V ratio:  $1.11 \pm 0.14$ ). Furthermore, the activation of IR-induced apoptosis-associated caspase 3 was also reduced after pretreatment of atorvastatin. Furthermore, atorvastatin down-regulated the mRNA levels of inflammatory molecules, including IL-1 $\alpha$ , IL-6, MMP9, NF- $\kappa$ B, Pin1, and TGF- $\beta$ 1 and the levels of fibrosis factor, including collagen I and III. In conclusion, atorvastatin can decrease the level of apoptosis, inflammation, and fibrogenesis of small intestine tissue after abdominal radiotherapy.

### Biography

Ching-Hsueh Cheng has received his BS degree in Medical Imaging and Radiological Sciences at Chung Shan Medical University, Taichung, Taiwan (ROC). He has received his MS degree in Anatomy and Cell Biology from National Taiwan University of Medicine, Taipei, Taiwan in 2012. He has served as a Radiation Technician at Division of Radiation Oncology, Department of Oncology, National Taiwan University Hospital, Taipei, Taiwan, since Aug 2012. His work contents included pre-treatment simulation, linear accelerator (Varian and Elekta) operation, and Tomotherapy. His research focused on the research of combined radiation oncology with cell conduction and signaling

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## Changing job composition for New York radiologic technology graduates due to growth of outpatient and urgent care centers and reduction in academic and complex hospital-based jobs

**Jaclyn Mina** and **Subhendra Sarkar**

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This work interviewed randomly selected Radiologic Technology (RT) graduates from New York to explore their job search experience. Approximately 1/3 found hospital based and the rest found outpatient or traveling technologist jobs as their first job. Currently, among 197,000 RT jobs nationally New York metropolis holds 14,000 positions with annual projected growth rate 2.4% or 400 RT's annually for next 3 years while nationally projected annual RT job growth is 1%. In spite of higher growth rate at present, busy areas like New York city nationally afford only 1.5 RT's/1000 jobs while rural areas offer 2-2.5 RT jobs/1000 jobs. In busy metropolises in USA, many facilities are expanding such as urgent cares and out-patient. There is a strong trend of a higher proportion of demand in outpatient diagnostic clinics and urgent care centers compared to hospital based RT jobs. Non-hospital based jobs often require multiple tasks including scheduling, billing, customer service, marketing etc. in addition to administering the diagnostic tests. However, without acute care and academic radiology experience, a large fraction of radiologic technology graduates today may lose their skill set and grow into a relatively unsophisticated radiology worker schedule with no ICU, psychiatry or tertiary radiologic responsibilities and miss out on cutting-edge diagnostic technology or radiology research.

### Biography

Jaclyn Mina has completed her AAS in Radiologic Technology from New York City College of Technology. She is currently a BS Student in Radiologic Science and has been working in Radiology Economics for a year in Undergraduate research. She also holds a Radiographer job at Pro Health Circle Urgent Care at Staten Island, NY.

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## Neural tube malformations diagnosed at prenatal ultrasound in Abidjan

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**Objective:** The objective of this study is to describe the morphological abnormalities of the neural tube discovered at ultrasound in Abidjan.

**Patients & Methods:** A retrospective multicenter study carried out over a 6-year period in Côte d'Ivoire (January 2009 to December 2015). All obstetric ultrasound reports were re-read. Cases of neural tube defects have been recurrent; Then their types, seating, associated signs and socio-demographic and epidemiological characteristics were described.

**Results:** 6714 obstetric ultrasound scans of the first, second and third trimesters were reviewed. 104 cases of fetal malformation (1.55%) were identified. 64.42% of the malformations (67/104) concerned the neural tube. The major morphological abnormality was lethal in 37 cases (55.22%) and minor, non-lethal in 30 cases (44.78%). The major morphological abnormalities were all anencephaly. Minor morphological abnormalities included 10 cases of myelomeningocele, 7 cases of lumbosacral spinabifida and 13 cases of hydrocephalus. Hydramnios were associated in 59 cases (88.06%).

**Discussion:** The rate of malformation of the neural tube would be high in our context for 3 reasons: The high prevalence of infectious diseases such as rubella and toxoplasmosis which have a high tropism for the neural tube. Poverty with a lack of folic acid supplementation necessary for the good development of the neural tube. A frequent association with a hydramnios (59 cases or 88.06%), a sign of specificity and high sensitivity (99.5% and 87.3% respectively) for the detection of fetal malformations in particular of the neural tube.

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## The sonographic evaluation of liver transplantation

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A discussion about the role of ultrasound in liver transplantation. The review seeks to present epidemiological findings about the populations in the United States in need of liver transplantation, the process of obtaining a graft, the common types of surgery available, and the postoperative role of ultrasound in liver transplantation. Sonoimages of transplanted liver will be reviewed. Studies will include normal appearance as well as abnormal findings representative of complications patients may suffer. Sonography is a safe and noninvasive modality that can help medical professionals identify problems as early as the day after transplantation, making it a choice method for determining the need for interventions. This is especially important as the viability of liver grafts decrease as time goes on; starting from about 86% the first year after transplantation and falling to about 70% in five years. With the rise of lifestyle-related diseases, the number of people in need of liver transplantation is increasing every year. As a result, it is becoming ever more important to provide early interventions to those that need it. Ultrasound is one very affordable modality that conserves resources and gives very good results in this field

### Biography

Miao Chen has completed her Bachelor of Science in Health Nutrition Sciences: Foods and Nutrition Sciences Concentration at the age of 23 from Brooklyn College, City University of New York. She is currently a student at the New York Medical Career Training Center studying to obtain her license in diagnostic medical sonography.

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## e-Posters

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## Comparison of four radiographic angular measures of lumbar lordosis

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**Background:** Lumbar lordosis (LL) is the curvature assumed by intact lumbar spine to compensate for the inclination of the sacrum, restore an upward spinal orientation, and consequently avoid a forward inclination. In the mid-sagittal plane, it is anteriorly convex. It may be altered by birth defects, trauma, degenerative and inflammatory disorders; therefore, its reliable measurement is relevant to the diagnosis and continuing care of patients with these disorders. Several attempts (radiographic and non-radiographic) have been made to measure the lumbar lordosis (LL), but the results differ substantially as investigators have used different parameters. Radiography is the gold standard, and some of the methods include Lumbosacral angle (LSA), lumbosacral joint angle (LSJA), Cobb angle, and TRALL (Tangential Radiologic Assessment of Lumbar Lordosis) angle. The traditional method, the Cobb technique, has a wide range of normal mean values, with a large standard deviation. Using a more reliable radiographic angle will hopefully simply and standardize LL measurement in the diagnosis, treatment and follow-up of patients.

**Aim:** To compare the normal LSA, LSJA, TRALL and Cobb angles, by determining (a) if any Correlation exists between them; and, (b) the most reliable measure of LL, based on, least (i) number of measurement lines, (ii) range of values, (iii) standard deviation, and (iv) variance.

**Methods:** The four angles were retrospectively measured in each supine lateral lumbosacral spine radiograph of 100 males and 100 females. Data was analyzed with IBM SPSS Statistics 23.0 (New York, USA);  $P < .05$  was considered significant.

**Result:** Each angle showed no male-versus-female Correlation; and, all four angles showed no Correlation between their mean values. The respective number of measurement lines, range of values, standard deviation and variance of (a) Cobb angle was 4, 61.0°, 12.8°, and 162.9; (b) LSA was 2, 53°, 10.0°, and 100.3; (c) TRALL angle was 5, 44°, 8.3°, and 68.1; and, (d) LSJA was 2, 34°, 5.7°, and 32.7.

**Conclusion:** In normal patients, there is no significant Pearson Correlation between the mean LSA, LSJA, TRALL and Cobb LL angles, and of the four angles, LSJA is the most reliable angular measure of LL.

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