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NewsLetter

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EDITORIAL
SILENT DEATHS AT NIGHT WHY?

In ancient Greek mythology, Sleep was the twin brother of Death, children of the personified gods of Darkness and Night. It seems there has always been an association between sleep and death. When people die in their sleep, it seems like a peaceful and almost idealized way to pass.

We spend one-third of our lives asleep, so it should be no surprise that a lot of people die in their sleep. There is an important difference between dying healthy and dying when unconscious in the latter stages of a fatal disease. Older people and those who are sick draw less scrutiny than the young. Depending on the setting of the death (home versus hospital versus assisted care facility), the death may be commented on by a physician. Rarely would an autopsy be performed unless there are unusual circumstances. This evaluation may be more likely in younger adults or children who die suddenly without known illness.Even an autopsy may be unrevealing. The cause of death may not be clear. The death certificate may note non-specific reasons: "cardiorespiratory failure," "died of natural causes," or even "old age. "Family and friends may wonder what really happened.

In some cases, death occurs due to some sort of external factor, either directly from the environment or another outside agent, for example, an earthquake,Carbon monoxide poisoning from faulty ventilation, overdose of certain medications or alcohol intoxication.

There is considerable evidence that cardiac function may be stressed during sleep. Rapid eye movement (REM) sleep, in particular, may redline the system with increasing risk in morning. There also seems to be a circadian pattern of cardiac dysfunction, with problems often occurring late in the night and near the time of waking. It is recognized that in the electrical storm that makes the heart's main pumping chambers suddenly begin to beat erratically in a way that stops the flow of blood to the brain and body termed ventricular fibrillation, the condition causes Sudden Cardiac Death (SCD), in which the victim instantly becomes unconscious and dies unless CPR or a defibrillator is available to shock the heart back into its steady beat. Sudden cardiac death (SCD) due to this electrical instability causes an estimated 325,000 deaths annually in the United States alone. One of the deepest mysteries about SCD has been its timing. Health experts have known for more than 30 years that the erratic heartbeat responsible for SCD strikes most often at certain times of the day. The peak risk hours range from 6 a.m. to 10 a.m., with a smaller peak in the late afternoon. Scientists long suspected a link between SCD and the 24-hour body clock, located in the brain. It governs 24-hour cycles of sleep and wakefulness called circadian rhythms that coordinate a range of body functions with the outside environment.

Specific SUD called sudden unexplained nocturnal death syndrome (SUNDS) has different academic terms but similar definitions in different countries, such as bangungut in Philippines, Lai Tai in Thailand, Pokkuri Death Syndrome (PDS) in Japan, and SUNDS in the United States and China. Despite these multiple terms, the common characteristics (modalities) of these victims are sudden death of young healthy individuals (the vast majority are males) during nocturnal sleep and postmortem routine autopsy that cannot explain their deaths. The pathogenesis of SUNDS has been extensively explored, mainly focusing on physiological abnormalities associated with electrical instability, respiratory problems, sleeping disorders, and metabolic and endocrine disturbance. Many surveys have been conducted to explore arrhythmia- associated environmental risk factors, such as potassium deficiency and excessive carbohydrate eating habit. Night terrors are a sleep disorder that is characterized by vocalization, clonic movements, an unarousable state, and severe autonomic discharge. These manifestations can also be observed in SUNDS cases before their deaths. The hypothesized mechanism is that night terrors cause sympathetic discharge, resulting in increased cardiac vulnerability to VA in patients with cardiac conduction defects.

If you struggle to get up in the morning you're at risk of early death. A six-year study of nearly half a million people in the UK has found that people who were "night owls" were 10 per cent more likely to die during that time period. It is reported in literature that people who stayed up late had higher rates of diabetes, mental health disorders, and neurological conditions. They were also more likely to experience psychological stress, drug abuse or alcohol, and not get enough exercise or sleep. The problem may be that people who are night owls have a body clock that fails to match their external environment.

But why most death occurs between 3 am to 4 am in early morning. There is no certain time for death and that can come at any time. Yet, some reports say most deaths occur during night while the time span between 3 am to 4 am is the most vulnerable. According to a research most hospital deaths occur between 3am to 4am. This is the time in a day when the body tries to prepare for the activities of the next day while the brain tries to dispose some information to give space to the future happenings of the next day. At this time, adrenaline and anti-inflammatory hormones are at their lowest which causes airways to narrow. Spasm triggering compounds are also at the highest at this time and a person is more likely to die at this time according to Harvard medical research. On the other hand there is a religious answer that says that the difference between spiritual world and earth is very thin at this hour and thus it is easy for one to transfer to the other world easily. Probably, that is the reason that the darkest of rituals are always done at around 3am to 4am.

The take home message from this article is"Light meals at night; timely and adequate sleep; No screen time before sleep; take your medications especially Beta blockers or antiarrhythmic drugs in time as prescribed."

"Don't be a night owl."

Dr. A. K. Dewan
Director - Surgical Oncology

EVOLVING ROLE OF INTRALUMINAL BRACHYTHERAPY IN MALIGNANT OBSTRUCTIVE JAUNDICE – ADDING NEW FEATHER IN THE CAP OF RADIATION ONCOLOGY

Malignant Obstructive Jaundice (MOJ) is an entity commonly seen in advancedcholangiocarcinoma, carcinoma of the gallbladder and pancreas and metastatic lymphadenopathy (from malignancies of the stomach, colorectum and breast).

Diagnosis of MOJ is associated with poor prognosis with reported one-year survival rate of 20-35%. Most of the patients present with jaundice associated with upper abdominal discomfort, general malaise, fever, anorexia, pain and pruritis. The intent of treatment is palliation and reduction in serum bilirubin levels. Cholangiopancreatography (ERCP) and stenting is the preferred method for proximal/extra hepatic biliary obstruction while Percutaneous Transhepatic Cholangio Drain (PTCD) is inserted in distal or terminal biliary obstruction. Self-expanding metal stent, due to its minimal invasion, low risk of migration and efficient bile drainage, has been widely used for management of MOJ.Trans arterial chemo embolization (TACE) has shown limited efficacy in these malignancies in most cases because of their relative avascularity.

Most of the hepatobiliary malignancies have the tendency to invade the bile duct, so the rate of stent occlusion due to tumor ingrowth or overgrowth is inevitably high. Stent occlusion rates of 30-45% have been reported in literature which has been identified as a major reason for re-appearance of jaundice after stenting, thus curtailing the effect of palliation. Various methods are employed to prolong stent patency and thus to improve patient survival. Intraluminal Brachytherapy is one such technique, which has evolved as an effective method over the years.

Role of radiation was first introduced in 1980s. It remains underutilized owing to technical difficulties and location of critical organs adjacent to target volume. However, increased utility of PTCD and availability of advanced radiotherapy planning and techniques haverevived the role of ILBT. The newer volume based radiation planning techniques such as HDR- ILBT (High Dose Rate- Intraluminal Brachytherapy) have many advantages such as increased conformality and rapid dose fall off. This helps in reducing the dose received by adjacent critical organs, negligible organ motion and short treatment time, thus minimizing risk of infection and patient discomfort.

Use of ILBT for stent occlusion has been an active area of research in many centers. A study by Xi et al demonstrated that mean stent patency was 12.6 moths with stent occlusion of 21.4% (3 of 14 patients) in patients treated with ILBT vs 8.3 months with stent occlusion of 45.0% in those who did not receive ILBT. In another analysis, mean stent patency after ILBT was reported to be 9.8 months.

We report a case of periampullary carcinoma, with intrabiliary stent occlusion presenting with hyperbilirubinemia (serum Total bilirubin 4.0 mg/dl). ILBT was used for local ablation of tumor at the level of stent obstruction with an aim of maintaining stent patency and subsequent chemotherapy.

The patient was taken up for the procedure in Cath lab under supervision of Radiation Oncologist and Interventional Radiologist.

An intraluminal brachytherapy catheter was placed under fluoroscopy guidance. CT based simulation and planning were done for accurate target volume delineation and conformal dose distribution. A dose of 12Gy single fraction HDR brachytherapy using Ir-192 was prescribed. Brachytherapy dose was delivered under all radiation safety measures under the supervision of the radiation oncologist, medical physicist, radiation technologist and radiation safety officer (RSO). The patient wasdischarged from the ward after a period of observation in a hemodynamically stable condition.

On follow up after one week, the patient reported symptomatic improvement and reduction in serum bilirubin level(serum Total bilirubin 2.1 mg/dl). She has further received four cycles of FOLFOX based chemotherapy till last follow up and maintains normal bilirubin level (serum Total bilirubin 1.0 mg/dl).

Intra luminal brachytherapy was successful in preventing stent occlusion and maintaining stent patency. Use of ILBT did not hamper her recovery and there was no delay in starting her further treatment. Apart from the above indication, ILBT can be used as a boost therapy with external beam radiation and also as a part of palliative care in hepatobiliary malignancies. This procedure can bring down the cost of management and morbidity of stent occlusion by helping maintain the stent patency for a longer period of time.

i. Kawamoto H. Analysis of longterm survivors with expandable metallic stent inserted for malignant biliary stenosis.J HepatobiliaryPancreatSurg 2003; 1:95-100.

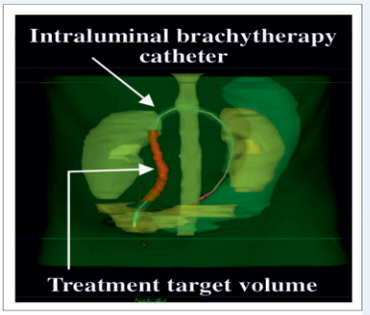
ii. Freeman MLet al. Selective MRCP and CT-targeteddrainage of malignant hilar biliary obstruction with self-expanding metallic stents. GastrointestEndosc 2003; 58:41-9.

iii. Shirabe K et al. Intrahepatic cholangiocarcinoma: its mode of spreading and therapeutic modalities. Surgery 2002; 131(1 Suppl):159-64.

iv. Yi Chen et al. HDR-192Ir intraluminal brachytherapy in treatment of malignant obstructive jaundice World J Gastroenterol2004; 10(23):3506-10.

v. Dvorak J et al. Intraluminal high dose rate brachytherapy in the treatment of bile duct and gallbladder carcinomas. Hepatogastroenterology 2002; 49: 916-17.

Intrabiliary stent with region of stenosis due to tumor in-growth



Dr. Jaskaran Singh Sethi
Sr. Consultant & Chief of GI, HPB & Pediatric Radiation Oncology Services

RADIOTHERAPY IN BREAST CANCER

Radiotherapy has withstood the test of time and has become an indispensable part of the multimodality treatment of carcinoma breast. Radiotherapy adds onto the benefit both in terms of progression free survival and overall survival. This is a well-established fact amongst scientific community on the backdrop of numerous well conducted research work spanning over decades.

Since the inception of radiotherapy in the cancer management in general, there has been a constant cynicism with regard to the use of ionizing radiation and the side effects associated with the treatment done using them. Radiation oncology has been in a constant melee to fend off the stigma attached to the use of ionizing radiation in oncology clinics. Riding on the astounding technological progress made in the way radiation treatment is being planned and delivered, radiation community has been able to mitigate most of the doubts with regard to the safety of radiotherapy. Radiation treatment now a days is meticulously planned on planning CT scans and delivered with daily imaging confirmations of the planned areas to be treated leaving very little chances for toxicities. Techniques like DIBH (deep inspiratory breath hold) have only cemented the safety profile of the breast radiotherapy further by minimizing the dose to the heart. With the addition of protons and other heavy particles to the ever-evolving armamentarium of radiation oncologists the delivery of radiation has only become safer in breast cancer patients with several trials being underway to substantiate these early results.

Radiation oncologists have been able to take note of the unique radiobiological properties of breast tissue and utilize that to squeeze the treatment to 3 weeks rather than the conventional 5 weeks with equivalent results both in terms of tumour control as well as from toxicity point of view. Newer trials have taken a major leap in shortening of the overall treatment time to only a week with sustained benefit and acceptable long-term sequelae.

With the technology involved in the radiation treatment making enormous strides stepping into the future, the effectivity and safety involved in the radiation treatment of breast cancer is only going to get better than ever and it will continue to be an inseparable part of the management of this malignancy whose incidence is on the rise.

Dr. Kundan Singh Chufal
Sr. Consultant & Chief of Breast &
Thoracic Radiation Oncology

3RD NATIONAL & 8TH ANNUAL NURSING CONFERENCE - NURSICON 2021

Nursing Department of RGCIRC organized 3rd National & 8th Annual Nursing Conference **NURSICON 2021** on 17th - 18th December 2021 at Hotel Crowne Plaza, Rohini, Delhi. The theme of the conference was **"Making a difference in every life we touch: "The future of nursing navigating beyond horizon".** Lt Col Madhumita Dhal, Director of Nursing welcomed the gathering and the conference was inaugurated by Brig (Dr.) Kanchan Sharma (Chief Guest), Mr. D. S. Negi (CEO), Dr. Gauri Kapoor (Medical Director - RGCIRC, Niti Bagh), Dr. Vineet Talwar (Director - Medical Oncology) & Dr. Pinky Yadav (COO & MS).Orthopedic Oncology spoke on **Recent Updates in Orthopedic Oncology**. The CME was very well appreciated by the gathering.

Different aspects of nursing related scientific sessions were covered by the speakers in the conference. There were also other activities like panel discussion, quality improvement project presentation, poster competition and quiz competition.

Topic for Panel Discussion was on **A voice to lead - A vision for future healthcare** and poster competition was on **Your Health is Our Priority**. Nearly 250 nurses from Delhi NCR actively participated in all activities of the event.

On second day, post scientific session there was short entertainment program which included classical dance and orchestra & an informative skit on "infection control practices "by infection control team.

The conference was successfully winded up with motivation and appreciation from all dignitaries and delegates.

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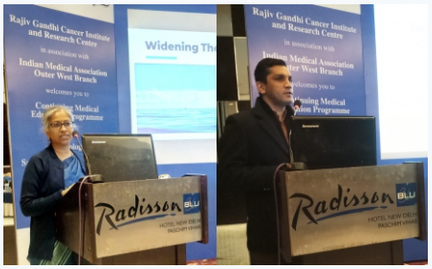
CME WITH INDIAN MEDICAL ASSOCIATION (IMA) OUTER WEST BRANCH



RGCIRC organized a CME in association with IMA Outer West Branch on Saturday,18th December 2021 at Hotel Radisson Blu, Paschim Vihar, New Delhi. Dr. Vaishali Zamre, Sr. Consultant & Chief of Breast Surgical Oncology Unit - 2 delivered a lecture on **Oncoplastic Breast Surgery: Widening Horizons of Breast Conservation** and Dr. Abhishek Bansal, Consultant - Interventional Oncology spoke on **Interventional Oncology: Minimally Invasive Treatment Options**.

VIRTUAL SEMINAR: PED-RTCON 2022

On the occasion of 25th anniversary of RGCIRC, the Department of Radiation Oncology and Pediatric Medical Oncology along with Pediatric Surgical Oncology organized a webinar on Pediatric Malignancies, PED-RTCON, on Saturday, 8th January 2022, under the aegis of Association of Radiation Oncologists of India, with able guidance of Dr. Jaskaran Singh Sethi, Sr. Consultant & Chief of GI, HPB & Pediatric Radiation Oncology Services and Dr. Gauri Kapoor, Medical Director – RGCIRC, Niti Bagh & Director – Pediatric Hematology & Oncology.

The scientific sessions included talks and panel discussions on pertinent issues related to management of Hodgkin's Lymphoma, Rhabdomyosarcoma and Ewing's Sarcoma. Eminent faculty from premier institutes participated in the discussions. The seminar was attended by about 300 oncologists dealing with pediatric malignancies.

The purpose of this interactive CME was to discuss the importance of a multimodal approach towards common childhood malignancies to optimize the critical balance between achieving local tumor control and minimizing late therapy related effects in long term survivors.

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