June 2010 Volume 38 Issue 2

RSSDI News

The Official Bulletin of
Research Society for the Study of Diabetes in India (RSSDI)

Message from the President

Dear Members,

Technology and human ingenuity manifest in many ways. It was surprising to be come face to face with the two in a few weeks.

It has become a truism that managing diabetes is limited not by science, but by putting science to practice. Earlier this month, I was gently asking what took so long for a woman with diabetes to make her second visit. "I wasn't in town,' she replied, and then, added cheerfully, "I joined an old peoples' home." Before I could respond, she said, an 'old peoples' home for diabetes.' That left me baffled: I hadn't heard of old peoples' homes specifically for diabetes. The four women with diabetes, friends and relatives all, decided to move together, pool a nominal amount for the upkeep, and let diabetes management be an integral part of their lives, letting them free of any dependence on their biological families. The 'diabetes old peoples' home' was dynamic. Each person could move out to visit their relatives, or to attend family reunions. What bound them was their diabetes: no explanations, excuses or apologies for the lifestyle the metabolic disorder demanded. That is the power of confronting a situation and circumventing it.

At the other end of the spectrum, a recent article in Proceedings of the National Academy of Sciences, USA (2010, 107:7898) reported how new methods were being developed to ensure privacy of individuals when their electronic medical records (EMRs) were linked to genome wide association data. EMRs are now a widely accepted practice considering their obvious advantages to the health care system, the patient and the physician. Now newer methods of linking genetic data with clinical information are being contemplated. Surely ten years after the first draft of the human genome project was announced, events are moving to revolutionize the way clinical medicine is being practiced. This revolution seems set to be upon us, insidiously perhaps, but a revolution nevertheless.

It has been fascinating to know of such solutions addressing the now-and-here' problems as well as fiction-type scenarios anticipated in the future.

Yours sincerely

GR Sridhar
President, RSSDI
Email: grsridhar@aol.in

Message from the Secretary

Dear Colleagues

Starting this edition we bring to you a new format of the RSSDI newsletter. From now on the newsletter would contain a new section on 'DIABETES DESPATCH' highlighting the recent developments in the field of Diabetes across the world. I am sure you will find this very interesting and useful. I look forward to your response and suggestions.

We have recently undertaken the exercise of making our website even more dynamic with addition of several new features. You can now log on to the website and update your profile yourself. This will ensure that there is no mistake in all your contact information and that you receive all the mails and journals regularly. Also, from now on all applications for Research Grants as well as for Accredition for Certificate Courses in Diabetology can be sent online through the website. We are also completing revision of the static content of the website to make it up to date.

I would take this opportunity to call upon all members once again to apply for RSSDI Research Grants to pursue your Research in Diabetes.

With best wishes

Dr. S.V. Madhu
Secretary, RSSDI

38th Annual Scientific Meeting of RSSDI - 2010

38th Annual Scientific Meeting RSSDI 2010

Date: November 18-20th, 2010
Venue: International Conventional Center, Hotel Le Meridien, Kochi.
Organising Chairman: Dr. R.V. Jayakumar
Organising Secretary: Dr. P.K. Jabbar

Conference Secretariat

Division of Endocrinology Government Medical College
Kottayam Phone: +91 9497585071, +91 9497585073
+91 9495874761, +91 9995578888, + 91 9446828766
E-mail: rssdikochi2010@gmail.com, drjabbar10@gmail.com, tomluciya@gmail.com
website: www.rssdi2010.org

Chairman, Scientific Committee: Dr. S.R. Aravind, Director, Diacon Hospital, Bangalore
E-mail replies to: draravind@hotmail.com, unnikrishnanag@aims.amrita.edu
Fax: 91-80-23130553, 91-80-23325824

Theme Symposia at RSSDI 2010

MMS Ahuja Symposium - Type 2 Diabetes of Young

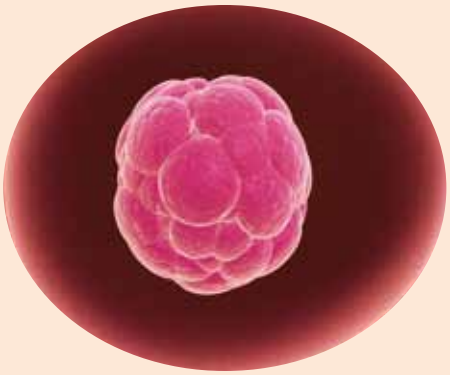
Nutrition Section - Nutritional aspects of Obesity and Diabetes

Please collect data on above themes and send your data to Chairman, Scientific Committee, 38th Annual Conference of RSSDI to be held at Kochi from November 18th to 20th, 2010. Please send all abstracts by e-mail only, on or before 31st August, 2010 to Chairman Scientific Committee.

DIABETES Despatch

News from the **JOURNALS**

New stem cells bring hope for the development of autologous therapeutic agents for prevention and reversal of type 1 diabetes



Researchers from the Department of Medicine at the University of Illinois, Chicago have reported the finding of new variety of stem cells that may open avenues for the development of therapeutic products for prevention and reversal of type 1 diabetes. Amongst various hindrances in the successful management, autoimmunity and shortage of insulin-producing cells are the two most important issues hindering successful treatment of type 1 diabetes. To cure type 1 diabetes in a comprehensive manner, both issues need to be addressed together. Regulatory T cells play a crucial role in maintaining homeostasis and self-tolerance through their inhibitory impacts on autoreactive effector T cells.

In a first, the researchers have reportedly identified a new variety of stem cells from human umbilical cord blood, which may be able to address immune modulation of the autoimmune process and allow for simultaneous beta-cell replacement. With the use of these cord blood stem cells the researchers were able to correct functional defects of regulatory T cells. This was associated with the reversal of overt diabetes in an animal model with an autoimmune-cause for the type 1 diabetes.

Although the research is in its incipient stage, the new stem cells offer a promising avenue for the development of autologous therapeutic products which may help in preventing and also reversing type 1 diabetes.

Middle-aged type 2 diabetics have a greater cognitive-decline compared to their non-diabetic counterparts - The Doetinchem Cohort Study

According to a new study published in the June 2010 edition of Diabetes care, middle aged diabetics suffer a greater decline in cognitive function than their non-diabetic counterparts. The Dutch prospective Doetinchem Cohort Study measured cognitive functioning twice during a five year time interval in 2613 with no past history of stroke. Change in scores on global cognitive function as well as on specific cognitive function areas (memory, speed of cognitive processes, and cognitive flexibility) were compared for subjects with and without type 2 diabetes.

At the end of the 5-year follow-up period, type 2 diabetics had a 2.6 times higher decline in global cognitive function compared to subjects without diabetes. Subjects with new-onset diabetes during the study duration also demonstrated cognitive decline, though, the magnitude of cognitive decline in patients with new-onset diabetic patients was intermediate between that of persons without diabetes and that of patients with pre-existing diabetes at baseline.

A systematic meta-analysis of the effect of oral antidiabetic agents on glycosylated hemoglobin levels- Sulfonylureas going strong

According to a new metaanalysis of the effect of various oral hypoglycemic agent-classes on glycosylated hemoglobin (HbA1c), the benefit of initiating an agent is most apparent within the first 4 to 6 months, with HbA1c reduction up to 1.5% on average.

The analysis was published in the May, 2010 issue of Diabetes Care and included only those trials which estimate the effect of oral hypoglycemic agents on HbA1c levels.

In all, 61trials on 103 comparisons including 26,367 participants were included in the analysis. The greatest treatment effect was observed with maximum doses of sulfonylureas after 12 weeks of therapy. This was followed by thiazolidinediones with maximum effect after 13-18 weeks. Across all oral hypoglycemic agent classes, incremental doses led to a further fall in HbA1C, with a maximum effect achieved by 3-6 months. The findings also supported the previous observations that a higher baseline HbA1c levels are associated with greater declines in HbA1c.

The inherent strengths of this analysis were that the researchers included only randomized controlled trials that met predetermined criteria, thereby minimizing the potential for bias. Trials of all currently used oral hypoglycemic agents were included with intervals ranging from 12 weeks to 2 years.

New ADA/ACC/AHA guidance recommends selective use of asprin in diabetics

According to a joint statement of the American College of Cardiology, the American Diabetes Association, and the American Heart Association low-dose aspirin is a reasonable measure to prevent a first heart attack or stroke among people with diabetes who also have a high risk for heart disease.

Patients with diabetes are at an increased risk of cardio-vascular events compared with age-and gender-matched people without diabetes. Amongst diabetes older than 65 years, almost two-third die from coronary heart disease and one-sixth from stroke. Various mechanisms involved include, increased tendency toward clot formation, platelet activity and damage to the arterial wall lining.

The following facts have been highlighted in the statement.

- For adult diabetic patients who are at an increased risk of cardiovascular disease (CVD) but not at an increase risk of bleeding, administration of low-dose aspirin is a reasonable option for the prevention of CVD
- Aspirin 75 mg to 162 mg per day should be considered for primary prevention in diabetics with a >10% 10-year risk of CV events. This would include most men over age 50 and women over 60 with diabetes who have one or more additional heart disease risk (family history of CVD, hypertension, smoking, dyslipidemia, or albuminuria)
- Aspirin should not be recommended for prevention for men under 50 and women under 60 with diabetes with no major additional risk factors, because the potential adverse effects offset the benefits of treatment.

Diabetes and risk of incident cancer: Good news for men, bad news for women

According to a new study reported in the June, 2010 issue of Cancer Causes & Control, type 2 diabetes mellitus increases risk of genital and colon cancers. While, the risk of genital cancers in diabetic women was found to be almost double, the risk of colon cancer was approximately 1.5 times, compared to the non-diabetic population. In contrast, in men with diabetes, there was no significant increase in overall risk of cancer. Instead, diabetes was associated with a 47% reduction in the risk of prostate cancer.

Observational studies have demonstrated that type 2 diabetes mellitus has been associated with an increased risk of a variety of cancers, but few have reported the relationship between diabetes and cancer risk in men and women separately.

This retrospective cohort study evaluated the sex-specific risk of incident overall and site-specific cancer among 16,721 people with type 2 diabetes and 83,874 without diabetes. These findings point to the fact that the nature of the association between diabetes and cancer depends on sex and specific cancer site.

An important implication of these findings is that they might encourage increased screening of diabetic women for these cancers, earlier and more often, than those in the general population.

Dead in the bed syndrome: The enigma

Medical mystery

In the year 1991, Tattersall et al reported a number of sudden deaths amongst young type 1 diabetics in the UK. After excluding various causes such as diabetic ketoacidosis and suicide the researchers reported 22 cases where a direct cause of death could not be established. These patients had gone to bed in apparently good health and been found dead in the morning. Most of them had no known complications of diabetes, and they died while asleep and were found in an undisturbed bed. Autopsy findings were negative as no anatomic lesion could be found. According to the timing of death and other circumstantial evidence it was suggested that hypoglycaemia or a hypoglycaemia-associated event was responsible. Since the first report in 1991, it has been estimated that as many as 6% of deaths type 1 diabetics who die before the age of 40 are due to the dead in the bed syndrome.

A modification of the original hypothesis that hypoglycemia is the cause, it has been suggested that nocturnal hypoglycemia may provoke changes in cardiac electrical activity, leading to arrhythmias that in turn lead to death. Researchers, by using continuous glucose and electrocardiographic monitoring, have found that hypoglycemia can alter the electrical activity of the heart causing arrhythmias. Other causes like mitral valve prolapse have also been reported. To date the exact cause for the syndrome has not been established but most authorities recommend avoidance of nocturnal hypoglycemia by:

- Checking blood glucose levels at night; continuous glucose monitoring will provide an idea of the risk of nocturnal hypoglycemia
- Night-time insulin dose should not exceed the recommended doses, or long-acting insulin accidentally replaced by a short-acting insulin
- Switching the patient from older insulin (NPH), and avoidance of short-acting insulin at bedtime
- Changes in meal planning, and avoiding strenuous exercise before going to bed.

American Association of Clinical Endocrinologists (AACE)

19th Annual Meeting, April 21-25, 2010; Boston, Massachusetts

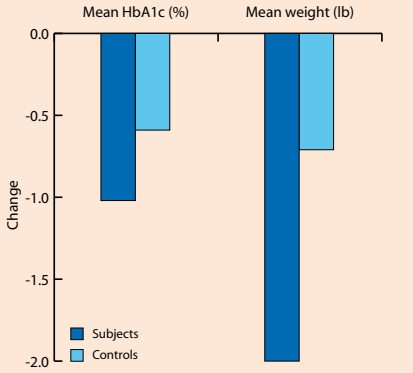
Time we underlined the value of diabetes education on glycemic control and weight reduction

I Sachmechi, S Ahmed, V Rizzo, D Reich, H Payne, B Meenattoor, et al.

While the importance of diabetes education and dietitian counseling along with pharmacotherapy is well recognized, their utilization is limited by a many factors. The researchers in this retrospective case control study demonstrates that diabetes education and dietitian counseling by educators and a dietitian can improve glycemic control and promote weight loss in patients with type 2 DM even without an endocrinologist's intervention.

The study involved 2 groups of type 2 diabetics patients with subjects (n = 150) referred by their primary care physician to two diabetes educators and a dietitian for counseling while the control group (n = 150) was not seen by a diabetes educator and/or a dietitian during the same period of time. Glycosylated hemoglobin (HbA1c) and weight were compared before and 6 months after the respective interventions.Mean HbA1c and weight reductions were higher in subjects compared to controls (Figure 1).

Figure1: Mean changes in glycosylated hemoglobin and weight in study population



This study demonstrates that diabetes education and dietitian counseling alone can effectively lead to higher improvement in glycemic control and weight loss in patients with type 2 diabetes and provides a measurable improvement even in a set-up with limited resource.

Salsalate improves glycemic control both in prediabetic and diabetic subjects

E Faghihimani, P Adibi, H Resvanian, A Aminorroaya, M Amini.

Salsalate, an inhibitor of the nuclear factor kappa-B kinase subunit beta (IKKß) pathway, has been found to be useful in the management of diabetes. IKKß plays a role in the development of insulin resistance and diabetes. This has been demonstrated in 2 randomized, double – blind, placebo controlled clinical studies presented at the AACE 2010 conference.

The first study included 120 prediabetic subjects who were first degree relatives of diabetic patients. Prediabetes was defined according to the ADA criteria ((fasting glucose between 100 - 126 mg/dl or glucose level two hours after 75 gram oral glucose 140 - 200 mg/dl). Patients received either salsalate 3 g/day or identical placebo for 3 months.

Salsalate reduced fasting plasma glucose by 11%. Homeostasis model assessment of insulin resistance HOMA-IR changed from 5.1 ± 3.0 to 3.0 ± 1.5 in salsalate group and from 5.3 ± 4 to 4.8 ± 3 in placebo group. Patients in this study had no serious complication, though tinnitus was reported by some which was not persistent after reducing the dose of salsalate.

The second study included 60 adults, 40 to 70 years old, whose diabetes had been established during the 2 months before study and who had not received any anti- glycemic agent. They were randomized to receive either salsalate 3 g/day or placebo.

Salsalate reduced fasting glucose by 14.5%, glycemic response after an oral glucose tolerance test by 7%, and triglycerides by 12.5%. HbA1c in the placebo group increased during the study from but decreased in the salsalate group. Total cholesterol, HDL and LDL cholesterol were not affected by salsalate treatment. No serious side-effects or complications were reported in any of the subjects.

These data show that salsalate, an anti-inflammatory agent can decrease glucose level in diabetic patients and may have a place in the management of diabetes in the future.

Continuous glucose monitoring helps in hypoglycemia detection in hospitalized patients

M Ryan, V Savarese, B Hipszer, MK McCullen, T Jose, et al.

A new study presented at the AACE, 2010 conference has clearly demonstrated that real-time continuous glucose monitoring (CGM) could lead toearlier detection of hypoglycemia and prevention of hypoglycemia related complications in high-risk hospitalized patients.

Fourteen patients (nine type 2 diabetics, three type 1 diabetics, and two without diabetes) with a documented hypoglycemic event during their hospitalization were recruited and underwent CGM. Data was collected until either the patients anticipated day of discharge or completion of 144 hours of CGM data collection. Point-of-care (POC) and laboratory blood glucose levels were also monitored during the study.

Overall 35 separate episodes of hypoglycemia with a mean duration of 68 mins. were observed in 10 patients, while POC testing detected only 14 hypoglycemic episodes occurring in 8 patient. For those hypoglycemic episodes which were detected by both CGM and POC testing, CGM detected these episodes earlier with a mean time-gap of 102 minutes. Real-time monitoring of blood glucose could lead to earlier detection of hypoglycemia and prevention of related complications in high-risk hospitalized patients with comorbidities.

Innovations

A new point-of care test for glycosylated hemoglobin makes it easier to monitor

Glycosylated hemoglobin (HbA1c) has been used in monitoring the glycemic control in diabetics and recently the test has been approved for diagnostic screening of diabetes by the American Diabetes Association.

A company in the USA has recently launched a point-of-care HbA1c assay that offers rapid testing capabilities. The assay can be run from a simple finger stick blood sample and delivers accurate and reliable results in minutes. Another major advantage is the fact that unlike other point-of-care systems for HbA1c, the assay does not interfere with common hemoglobin variants including Hb E, Hb C, Hb S and Hb D traits.

This assay offers freedom from interference in HbA1c testing, which is of special importance in today's clinical scenario as the HbA1c test is now considered the key test for diagnosis and screening of diabetic disease.

Artificial pancreas shows promise for type 1 diabetics

Maintaining recommended blood sugar levels is a major challenge for people with type 1 diabetes because of the possibility of blood glucose dropping dangerously low, which can lead to seizures, coma, and in some cases death.

Researchers at MGH and Boston University have reported that an "artificial pancreas" has demonstrated good results in 11 patients enrolled in a study. The device consists of insulin pumps, glucose sensors, and a laptop with regulatory software. The safety and efficacy of a novel closed-loop system that incorporated the use of glucagon, in addition to insulin was evaluated. The addition of glucagon to the closed-loop system was designed to more closely mimic the physiology of a person without diabetes. Currently, glucagon is not used as a routine part of type 1 diabetes therapy, but is used to treat hypoglycemic emergencies. All 11 adults in the study had good blood sugar control without experiencing hypoglycemia.

The finding gives hope that the future holds the promise of a fully functioning artificial pancreas that can give type 1 diabetics an automated way to control their blood sugar.

Nanoparticle breath test detects acetone levels in type 1 diabetics

Scientists at the Particle Technology Laboratory, in Zurich, Switzerland have reported the development and successful testing of a sensor that can instantly tell whether an individual has type 1 diabetes. Novel chemo-resistive detectors were utilized for quantitative analysis of acetone concentration, an important breath marker, in ideal (dry air) and realistic (90% relative humidity) conditions.

The detector films are made of highly sensitive nanoparticles (10 – 13 nm in diameter) deposited onto interdigitated electrodes. Rapid detection of 20 parts per billion acetone real-life conditions was demonstrated by these low cost, solid state devices, showing a great potential for their application in noninvasive diagnosis of diabetes.

It could also be used by emergency room doctors to determine whether a patient has developed diabetic ketoacidosis. The technology may also be used by diabetics, in their own homes, to determine whether they need more insulin. A report on the sensor appears in ACS' Analytical Chemistry, a semi-monthly journal.

The researchers have explained that they have built an extremely sensitive acetone detector which acts like an electrical resistor. When the instrument gets a puff of acetone-filled air, its resistance drops, allowing more electricity to pass between the electrodes. When a healthy person exhales onto the nanoparticles, their resistance would not change much but if a diabetic were to breathe on the sensor, its resistance would suddenly drop. These solid state detectors may some day offer a portable and cost-effective alternative to more bulky systems for noninvasive diabetes detection by human breath analysis with out the hassle of going through painful finger pricks.

Certificate Course in Diabetology

RSSDI will be approving centers/institutes who wish to start certificate course in Diabetology. Interested centers with necessary infrastructure and expertise as specified may write to the RSSDI Secretariat expressing their interest and seeking accreditation/ inspection by an RSSDI team. **Interested centres can also apply directly on RSSDI website www.rssdi.in.**

RSSDI accredited centers for certificate course in diabetology till June 2010

- DIACON HOSPITAL, Bengaluru
  Course Director: Dr. S.R. Arvind
- NORTH DELHI DIABETES CENTRE, Delhi
  Course Director: Dr. Rajeev Chawla
- PRITHVI HOSPITAL, Tumkur, Karnataka
  Course Director: Dr. T.S. Shashidhara
- BANGLORE HOSPITAL, Bengaluru
  Course Director: Prof. C. Munichoodappa
- DR. MOHAN'S DIABETES SPECIALITIES CENTRE and
  DR. MOHAN'S DIABETES EDUCATION ACADEMY, Chennai
  Course Director: Dr. V. Mohan
- ADITYA DIAGNOSTICS & HOSPITALS, Dibrugarh
  Course Director: Dr. S.C. Jain

Accredition of other centers is under process.

Research Grant Announcement

For providing research grants, RSSDI is inviting proposals from Indian scientists, who are interested in conducting original research in the field of diabetes mellitus. Furthermore, limited grants are also available for the students of medical colleges for smaller projects.

There is no deadline for submission of the proposals, which can be sent throughout the year.

For further details interested candidates should the website www.rssdi.in

RSSDI Website Notice

A completely dynamic website of RSSDI is now fully functional. You can visit **www.rssdi.in** and update your address and email details after logging-in as a member. Every life member of RSSDI has been alloted a specific login ID and a password, which are being sent individually through a separate letter.

RSSDI Elections

Elections for the RSSDI Executive Committee and its office bearers for the period 2011-13 are due this year.

Notification letter and nomination forms have been sent to each life member.

Please note the last date for receiving the duly-filled nomination forms is July 31, 2010

Published by **JAYPEE BROTHERS MEDICAL PUBLISHERS (P) LTD.** on behalf of **RSSDI**
4383/24, Ansari Road, Daryaganj, New Delhi 110 002, India, Phone: +91-11-43574357, Fax: +91-11-43574314
email: jaypee@jaypeebrothers.com, Website: www.jaypeebrothers.com

Chapter News

State chapters of RSSDI have conducted several activities in this year so far both academic as well as those related to functioning of the society. The details are given below:

Delhi Chapter

Bimonthly scientific meetings Keeping its focus on academics, the Delhi chapter has been organizing regular bimonthly meetings that cover original research as well as reviews on latest developments in the field of diabetes.

First meeting was held on February 14th with a presentation on "Prevalence and odds of depression in adults with type 2 diabetes" by Dr. Naseer Ali from AIIMS, followed by session on "Genetics of type 2 diabetes – where do we stand in India?" delivered by Professor Nikhil Tandon from AIIMS. The meeting was also graced by Dr. Paresh Dandona from Kaleida Health, Buffalo, New York, who delivered a guest lecture on "Anti inflammatory aspects of insulin".

Second meeting in April had two presentations. Dr. B.M. Makkar shared his data on "Evaluation of oral anti-diabetic agents as initial therapy for recently diagnosed type 2 diabetes patients with severe hyperglycemia" which generated a lot of discussion. Dr. Vinod Mittal provided an current perspective on guidelines for the diagnosis and management of hyperglycemia in pregnancy.

Third meeting was held on June 13th that covered two topics, "Revisiting pathophysiology of type 2 diabetes – Focus on SGLT2 inhibitors" and "Prevalence of cardiac autonomic neuropathy in newly detected type 2 diabetes patients". The first topic was reviewed by Dr. Rajeev Chawla, senior consulting diabetologist at North Delhi Diabetes Centre, while the data for the second topic was from his center.

Annual conference The 6th Annual Conference of RSSDI Delhi Chapter is scheduled to be held on September 19th, 2010 at Hotel Lalit, New Delhi. The conference will be a full day event covering the entire range of sessions such as research presentations, debates, update presentations and panel discussions.

Kerala Chapter

As part of its regular academic activities, the Kerala chapter organized the annual meet on May 29th through 30th. At this event, the body honoured six senior diabetologists of the state. The third quarterly meet was held on March 7th at Ottapalam. On research front, the chapter has so far obtained approval on four papers for which grants are being released soon. The next meeting is scheduled to be held in August in Trivandrum.

Annual conference The 38th annual conference of RSSDI in 2010 is being organized by the Kerala Chapter iat Kochi from November 18th to 20th.

Karnataka Chapter

Two CMEs were conducted by the Karnataka chapter, in Bilapur and Nipani on March 7 and March 20 respectively. A workshop on "How to write a scientific paper" was organized by the chapter on March 14 to familiarize its members with the conventions and rigours of scientific writing.

Gujarat Chapter

Gujrat chapter of the society organized "Diabetica 2010" at Hotel Grand Regency, Rajkot on April, 2010, which was attended by more than 200 delegates drawing faculty from across the country.

Andhra Pradesh Chapter

Andhra Pradesh chapter conducted a CME program on May 9th at Greenpark Hotel, Hyderabad. The topic was role of insulin in the management of type 2 diabetes by Dr. Rakesh Sahay. The general council meeting of the chapter was also conducted on the same day.

RSSDI Secretariat
Department of Medicine, Division of Endocrinology & Metabolism
University College of Mdical Sciences (UCMS), Dilshad Garden, Delhi - 110 095
Phone: +91-11-22586262, Ext. No. 2554; Fax: +91-11-22590495, E-mail: rssdihq@gmail.com Website: www.rssdi.in