Sickle Cell Disease

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Sickle Cell Disease is the most common genetic disease and has been recognized as a major public health problem by international agencies such as the World Health Organization (WHO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). The principality of Monaco, through its support of the Association Mondiale des Amis de l’Enfance (AMADE), founded by HSH the Princess Grace in 1963 with the current President her daughter HRH the Princess of Hanover, seeks to address the needs of children in developing countries. Increasingly, this has focused on the problems of sickle cell disease and Monegasque Cooperation has contributed to the development of sickle cell services and Centres in Niger from 2008, Mali from 2009 and most recently Burkina Faso. In its latest initiative, the virtual Medical University of Monaco [UMVM], is launching an internet based course on sickle cell disease which will supplement these contributions by providing education to health care personnel offering services to affected patients.

A Course on Sickle Cell Disease offered by the Virtual Medical University of Monaco

Course Description

There are 14 modules, in multimedia format and in English and French languages, addressing major issues in sickle cell disease, interspersed with multiple choice questions which allow self assessment of the individual’s knowledge and proficiency. These modules have been prepared and recorded by 11 different experts from Belgium, the Democratic Republic of Congo, France, India, Jamaica and Monaco. Training booklets providing further details are appended to the modules. This basic format is supplemented by recorded interviews with experts from North America, Europe, Africa, the Middle East and India. There is also a recording of a Debate on Ethical issues arising from current approaches such as the role of population screening, newborn screening and prenatal diagnosis.

The course is designed for workers who are not experts in sickle cell disease but who provide services for such patients.
From the course they will learn the basic principles of genotype diagnosis and the features and management of the common and important clinical problems. Treatment is addressed under the individual complications but also by summarising the broad modalities of therapy such as transfusion, hydroxyurea, the role of antibiotics, joint replacement surgery, and bone marrow transplantation. Prevention is addressed by the roles of population screening, counselling and prenatal diagnosis. The course is developed sequentially starting with the history of the condition, the basic concepts of haemoglobin structure and inheritance, molecular mutations occurring in the different globin chains, and their effects in causing disease. This is followed by diagnostic criteria for the genotypes of sickle cell disease, their differentiation and the special challenges of diagnosis in the newborn period.

This is followed by presentations of the vascular pathophysiology of the disease and then a survey of some of the principal clinical complications and their management which includes splenic pathology, bone marrow damage with its sequelae of dactylitis, bone pain crisis, hip necrosis and rib involvement, pregnancy, leg ulceration and growth. There are then a series of modules addressing specialist aspects of the disease such as the haematology, pulmonary problems manifested as the acute chest syndrome and pulmonary hypertension, renal pathology, the etiology, prevention and treatment of stroke, gallstones, the arthropathy and bone complications and a brief survey of ophthalmological changes.

The final sections include an assessment of the disease as it affects pediatric practice, the experience of a centre in the Democratic Republic of Congo, and recent developments in stem cell transplantation and its role in the management of sickle cell disease. The final module addresses public health measures and the approaches which will be needed to prevent the disease, thus reducing the patient load to manageable proportions.

Interviews with 18 specialists which were conducted at an International Congress in Raipur, India in November 2010 present a series of individuals’ perspectives from doctors working in 4 continents.

The course, coordinated by Professor Graham Serjeant who has worked on the disease for over 40 years in Jamaica, draws together the combined experience of many contemporary workers. Negotiations are currently underway to obtain continuous medical education (CME) credits. Mechanisms are in place for continuous updating of the course from new research and developments and the opportunities for a ‘bulletin board’ approach to specific clinical questions from delegates pursuing the course is being investigated.

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**Course Director**
Prof. Graham Serjeant
Sickle Cell Trust Jamaica, Kingston, Jamaica

**Teachers**
- Dr. Michel Aloni Ntetani
  University Hospital Of Kinshasa, Kinshasa, Democratic Republic of Congo
- Prof. Françoise Bernaudin
  Créteil Hospital, National Referral Center In SCD, Créteil, France
- Dr. Olivier Blanc-Brude
  Inserm, European Hospital Georges Pompidou, Paris, France
- Prof. Alina Ferster
  University Pediatric Hospital (Huderf & Ulb), Bruxelles, Belgium
- Dr. Yazdi Italia
  SCAnaemia Control Program, Valsad, Gujarat, India
- Dr. Tristan Lascar
  Princess Grace Hospital, Principality of Monaco
- Dr. Sylvain Le Jeune
  APHP, Avicenne University Hospital, Sickle Cell Network North-Eastern Paris, Bobigny, France
- Dr. Jyotish Patel
  Vision Medical Foundation For Rural Health And Research Bartoli, Gujarat, India
- Dr. Marilucy Suárez-Lopeç
  APHP. Avicenne University Hospital, Sickle Cell Network North-Eastern Paris, Bobigny, France
- Dr. Suzanne Verlhac
  Créteil And Robert-Debré University Hospitals, National Referral Centers In SCD, Créteil and Paris, France
5. Drugs for the treatment of SCD and β-thalassemia
   a) Haematology (R)
   b) Cardiol Doppler (R)

Dr. Olivier Blanc-Brude

3. Clinical Complications (L). TDM: 1h47
   Prof. Graham Serjeant

   Interview with patient (R)

4. Hematological Considerations (L). TDM: 1h34
   Prof. Graham Serjeant

   (ITW) Prof. Roberto Gambari (Ferrara, Italy): Natural substances for HbF induction for the identification of drugs for the treatment of SCD and β-thalassemia
   (ITW) Prof. Andreas Kulozik (Heidelberg, Germany): The Asian haplotype of SCD
   (ITW) Dr. Abdullah Kullar (Augusta, GA, USA): Effects of thalassemia on sickle cell disease
   (ITW) Dr. Bill Wood (Oxford, UK): Genetics and effects of high levels of HbF

5. Pulmonary Complications TDM: 2h08
   a) Acute Chest Syndrome (L)
   b) Pulmonary Arterial Hypertension (L)

Dr. Sylvain Le Jeune

6. Renal Complications (L). TDM: 1h13
   Dr. Marilucy Sobletz-Lopez

   Interview with Prof. J.-J. Mourad (R)

7. Cerebrovascular Complications TDM: 2h21
   a) Pathophysiology (L)
   b) Transcranial Doppler (L)
   c) Stroke Prevention (L)

Dr. Suzanne Verlhac

8. Arthropathy and Bone Changes (L). TDM: 45min
   Dr. Tristan Lascar

   Interview with Dr Tristan Lascar (R)

9. Other complications TDM: 50min
   Hepatobiliary Complications (L)
   Ophthalmic Complications (L)

   Prof. Graham Serjeant

   (ITW) Prof. Dapa Diallo (Bamako, Mali): Screening experience for SCD at Bartoli (India) (L)
   (ITW) Dr. Abdullah Kullar (Augusta, GA, USA): Management of adult SCD in USA
   (ITW) Prof. Dimitri Loukopoulos (Athens, Greece): Situation of SCD in Greece
   (ITW) Dr. Isaac Odame (Toronto, Canada): The Global Sickle Cell Disease Network

10. Management of SCD in Pediatrics TDM: 1h24
    a) General Principles (L)
    b) Prevention of Infections (L)
    c) Treatment by Hydroxyurea (L)
    d) Treatment by Transfusions (L)

   Prof. Françoise Bernaudin

   (ITW) Prof. Jacques Elion (Paris, France): Treatment with Hydroxyurea
   (ITW) Dr. Adrienne Lerner (Colombes, France): Psychological Implications of SCD: French experience in 2 hospital settings
   (ITW) Dr. Sharada Sarnaik (Detroit, MI, USA): Management of pediatric SCD in USA

11. Hematological Stem Cell Transplantation (L). TDM: 1h43
    Prof. Alina Ferster

    Interview with a mother (R)

12. SCD in Africa TDM: 1h20
    SCD in Democratic Republic of Congo (L)
    Dr. Michel Aloni Ntetani

    (ITW) Prof. Dapa Diallo (Bamako, Mali): Management of SCD in Mali / Creation of a first African dedicated center
    (ITW) Prof. Mohamed C. Rahimy (Cotonou, Benin): Situation of SCD in Benin
    (ITW) Dr. Leon Tshilolo (Kinshasa, DRC): 1: Sickle Cell in the Democratic Republic of Congo 2: Financement of a center

13. SCD in Asia TDM: 2h36
    a) Screening experience for SCD at Bartoli (India) (L)
    Dr. Jyotish Patel
    b) Sickle Cell Anemia Control Programme, a Go-NGO Partnership Program of Dept. of Health and Family Welfare; Govt. of Gujarat, India (L)
    Dr. Yazdi Italia
    c) Screening programme in Gujarat (India): From the camp to the Laboratory (R)

    (ITW) Dr. Shaikha Al-Araydeh (Bahrain, Kingdom of Bahrain): Prevention by premarital screening in Bahrain
    (ITW) Dr. Roshan Cohah (Mumbai, Maharashtra, India): Prenatal diagnosis of Sickle Cell Disorders in India
    (ITW) Dr. Yazdi Italia (Vadod, Gujarat, India): Management of SCD in rural, suburban and urban population in Gujarat: a model for India?
    (ITW) Prof. R. Krishnamoorthy (Paris, France and Oman, Sultanate of Oman): Sickle Cell in the Sultanate of Oman + particular type of haplotype
    (ITW) Dr. Jyotish Patel (Bordoli, Gujarat, India): Screening, information and evaluation in tribal populations
    (ITW) Prof. P.K. Patra (Rajpur, Chhattisgarh, India): 1: Screening programme in Chhattisgarh 2: Situation of SCD in India

14. Public Health Issues (L). TDM: 2h08
    Prof. Graham Serjeant

    (ITW) Dr. Abdullah Kullar (Augusta, GA, USA): Management of adult SCD in USA
    (ITW) Prof. Dimitri Loukopoulos (Athens, Greece): Situation of SCD in Greece
    (ITW) Dr. Isaac Odame (Toronto, Canada): The Global Sickle Cell Disease Network

15. Round Table TDM: 1h20 min
    Clinical and biological pictures and differences in different regions of the World; Ethical issues; Different approaches of public health for different countries and areas; Malaria and SCD.

    Prof. G. Serjeant; Prof. R. Krishnamoorthy; Prof. J. Elion; Pr R.K. Singh; Dr N.L. Phujiene; Dr B.C. Koornar, Dr L Tshilolo; Dr R Colah; Dr S Al-Arayed; Dr A Lerner and the participants of the 4th International congress on SCD – Raipur, Chhattisgarh, India, nov. 2010.
About the Medical Virtual University of Monaco

UMVM, a non-profit organization, provides e-learning courses for physicians and for other professionals of health care delivery. The first priorities of our programs are the fields in which there is an urgent need of additional training. It is the case (i) when important new tools for diagnosis and treatment are discovered or made available; (ii) when additional training in a field or subfield is badly needed for public health reasons, globally or in a region of the world; (iii) in the fields in which more circulation of continuing education needs to be especially supported. A special effort is invested to integrate the results of clinical and translational research in the curriculum when it improves care of the patients, prevention and public health. Most courses are produced in English and in French; productions in other languages are considered when necessary. For each course, a dozen of teachers are recruited all over the world, with the intent to have 1/3 of teachers from Europe, 1/3 from the American continent, and 1/3 from other countries. Certifications are organized specifically for each course in collaboration with certifying public and private agencies. The tuition fees are used only to cover a part of the costs of production; UMVM helps to find scholarships when necessary.

The Medical Virtual University of Monaco is also producing and preparing selected training programs for patients, relatives, and associations in fields in which there is a special need for such programs.

Philippe Évrard

Registration & Information

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On our website: www.umvm.net

The Sickle Cell Disease Course in brief

22 multimedia lectures with their written materials
Round Table with international experts
150 MCQ – CME
25 interviews and reports
27 speakers from 16 different nations
+ 25 hours of fully bilingual training [English, French]

Registration fees: 500 €.
Terms available on our website (www.umvm.net)

Grouped purchases by institutional investors: please contact us.

Professor Philippe Évrard