

# News from here and there

## Hand-held ECG device

The Bhabha Atomic Research Centre (BARC) had developed a base technology for 'Handheld 12-Channel Tele-ECG Instrument' ([www.barc.gov.in/technologies/ecg/index.html](http://www.barc.gov.in/technologies/ecg/index.html)). One of the licensees, M/s Cardea Technologies, Bengaluru, had technically modified this technology and had developed Accurate TeleECG On Mobile (ATOM), a small hand-held, battery operated device that facilitates viewing of medical grade 12-lead ECG signal in real-time on android smartphones. On the press of a button, a noise-free, 3-page PDF report comprising a standard report, a rhythm report, and a vector cardiogram in a PDF format can be generated using the app. The device is designed to work on all variants of smartphones and with other mobile services such as WhatsApp and e-mail. The recorded PDF can be easily transmitted to a doctor for immediate consultation. ATOM has been developed with know-how from BARC with clinical inputs from the Department of Cardiology, AIIMS, New Delhi and financial assistance by BIRAC, Department of Biotechnology, Government of India. The device was tested simultaneously at the AIIMS, New Delhi and INS

Ashvini, Mumbai and found to be useful in the real-time field setting.

Nearly 50 ATOM devices were made commercially available to several doctors, hospitals and clinics. The current version of ATOM is priced at about ₹50 000. ATOM was officially launched in Rajasthan on 4 September 2018 in the presence of Mr Naveen Jain (MD, National Health Mission Rajasthan, Government of India) who flagged off ATOM for data collection and screening cardiac patients at primary health centres and community health centres in the state of Rajasthan. The launch of ATOM was organized by WISH Foundation (Wadhvani Initiative of Sustainable Healthcare) under the BIRAC–WISH partnership (Fig. 1).

Dr C. Narasimhan, Director Cardiac Arrhythmia Services, CARE Hospital, Hyderabad, told this correspondent: 'This machine will be very useful in peripheral, rural centres. The ECG can be acquired by the EMTs and transferred to the physician/cardiologist for interpretation. It can also be used in the field during a home visit by a nurse or healthcare worker.'

WISH will also perform the health technology assessment in addition to the introduction of ATOM as a solution to cater to the cardiac burden to the last mile. Cardea Labs are planning to launch a newer version of their app, which will incorporate deep learning and artificial intelligence to process the recorded ECG. This upgrade will be made available to all the existing users before making it commercially available.

ALLADI MOHAN, *Tirupati, Andhra Pradesh*



FIG 1. ATOM (standee picture courtesy Mr Abhinav, MD and CEO, Cardea Labs and Cardea Biomedical Technologies, Bengaluru, Karnataka)

## 2018 Nobel and Ig Nobel awards for Medicine

The 2018 Nobel Prize for Physiology or Medicine was conferred by the Nobel Assembly at Karolinska Institute jointly to James P. Allison and Tasuku Honjo for their work on inhibition of negative immune regulation as a potential mode of therapy for treatment of cancers. James P. Allison, PhD, has been an investigator at the Howard Hughes Medical Institute among his various attachments. Since 2012, he has been Professor at the University of Texas MD Anderson Cancer Center, Houston, Texas and is affiliated with the Parker Institute for Cancer Immunotherapy. Tasuku Honjo, PhD, has been Professor at Kyoto University since 1984 and was also a Faculty during 1996–2000 and 2002–2004 at Kyoto University.

James P. Allison was one of several scientists who discovered that CTLA-4 functions as a brake on T cells. He developed an antibody that could bind to CTLA-4 and block its function, thereby unleashing the immune system to attack cancer cells. The principle was tested with promising results against malignant melanomas. Tasuku Honjo discovered PD-1, another protein expressed on the surface of T-cells that functioned as a T-cell brake, but operated by a different mechanism as compared to CTLA-4. Inhibition of this protein was found to have clear efficacy in inducing long-term remission and possible cure in several patients with metastatic cancer.

Utilizing effects of CTLA-4 and PD-1 blockade by treatment

modalities referred to as 'immune checkpoint therapy' has produced dramatic results in lung cancer, renal cancer, lymphoma and melanoma. Of the 2 treatment strategies, checkpoint therapy against PD-1 has proven more effective so far and the combined effort of these 2 scientists is the culmination of research attempting to engage the immune system in the fight against cancers. Since its discovery, several antibodies against the PD-1 receptor, including nivolumab, pembrolizumab, and atezolizumab, have won approval from the Food and Drug Administration (FDA). Pembrolizumab gained greater recognition after the former American President Jimmy Carter, who had melanoma with brain metastasis, was successfully treated with it.

When asked for her opinion on the subject by this correspondent, Dr Jyoti M. Bajpai, Professor, Department of Medical Oncology, Tata Memorial Hospital, Mumbai, and Founder General Secretary, Immuno-Oncology Society of India (I-OSI) said: 'James P. Allison had lost his mother, 2 uncles, and later a brother to this lethal disease, cancer. This was one of the driving forces for him and he was extremely passionate to translate his findings from bench to bedside which led to the development of a humanized anti-CTLA-4 antibody, ipilimumab. In 2010, ipilimumab broke the nihilism in melanoma and became the first ever treatment to improve survival in melanoma. In 2011, it became the first FDA-approved checkpoint immunotherapy against melanomas and the promising results essentially revolutionized melanoma care... and the combined effort of these two scientists is the [result] of 100 years of research attempting to engage the immune system in the fight against cancers which began with the "Colley's toxin" controlling a sarcoma. India has to keep pace with the revolution happening in the field and Immuno-oncology Society of India (I-OSI) ([www.immunooncologyindia.com](http://www.immunooncologyindia.com)) is a non-profitable organization established for promotion and advancement of scientific knowledge, research and increasing awareness regarding immuno-oncology. Promotion of collaborative research at national and international level will increase accessibility of these expensive drugs to the people ...'

On another note, the 2018 Ig Nobel Prizes were awarded at the 28th Annual Ig Nobel Prize ceremony in September 2018 at an event that was webcast.

The award for medicine-related research was presented to Marc Mitchell and David Waringer, for their work on the roller coaster rides play in hastening the passage of kidney stones. Their paper 'Validation of a functional pyelocalyceal renal model for the evaluation of renal calculi passage while riding a roller coaster' was published in *The Journal of the American Osteopathic Association* in October 2016.

The Medical Education prize was awarded to Akira Horiuchi from Japan for his medical report 'Colonoscopy in the sitting position: Lessons learned from self-colonoscopy' published in *Gastrointestinal Endoscopy* in 2006.

The Ig Nobel Prize for Biology was a multi-country joint award shared across Sweden, Columbia, Germany, France and Switzerland by Paul Becher, Sebastian Lebreton, Erika Wallin, Erik Hedenstrom, Felipe Borrero-Echeverry, Marie Bengtsson, Volker Jorger and Peter Witzgall. They showed that wine experts can reliably identify, by smell, the presence of a single fly in a glass of wine.

Other honourable mentions include James Cole, who won the Ig for Nutrition for calculating that the caloric intake from a human cannibalism diet is significantly lower than the caloric

intake from most other traditional meat-based diets and Paula M.S. Romão, Adília M. Alarcão and the late César A.N. for their paper 'Human saliva as a cleaning agent for dirty surfaces' published in *Studies in Conservation* in 1990, which won the 2018 prize for Chemistry.

Almost all the winners accepted their prizes in person.

MAHARRA HUSSAIN, *Dubai, United Arab Emirates*

### India's first uterine transplant baby

India's first uterine transplant baby, a girl christened Radha, was born on 18 October 2018 at Galaxy Hospital, Pune. This comes 4 years after the first successful uterine transplant delivery of the world was conducted by Dr Mats Brannstrom in Gothenberg, Sweden in October 2014. This is not only the first successful uterine transplant delivery of India but also in Asia.

Mrs Meenakshi Valnad, a patient with Aschermann syndrome underwent uterine transplant (uterus donated by her mother) in May 2017 by a 12-member team headed by Dr Shailesh Puntambekar, a laparoscopic surgeon. Later, in January 2018 she underwent embryo transfer. The baby was initially planned for delivery at 34 weeks but was delivered at 31 weeks 5 days via a caesarean section as the mother developed eclampsia and oligohydramnios. The birth weight of the baby was 1.45 kg. The patient was discharged after a total stay of around 10 months at the hospital.

The significance and controversies of this procedure were discussed over an email correspondence with Dr Giuliano Testa (GT), a pioneer in the field from the USA. His responses to some of this correspondent's questions were as follows:

Q1. Uterus is not a vital organ. Is it worth the risk for a woman to undergo transplant for a non-vital organ? What is the risk to the donor?

GT. We do not see this as an issue. Transplantation has evolved and is evolving from a life-saving procedure (liver-heart-lung) to a life-prolonging (kidney) to a life-enhancing (pancreas) to a life-normalizing procedure (face, limb and now uterus). If you [look up on] PUBMED, Arthur Caplan a famous ethicist in the USA, you will find an article about this evolution. The risk is not higher than a kidney or a liver donor, both procedures performed in high volumes in India ... the uterus is not a vital organ, and has exhausted its function in the donor. In the donor, the risk is not higher than a radical hysterectomy and slightly higher than a simple hysterectomy. As in any living donor procedure, informed consent of the donor is the key.

Q2. The pregnant woman and foetus is exposed to immunosuppressants. What is the risk associated with that?

GT. We have data from the European transplant registry that the foetus does not incur any higher risk because of the exposure to immunosuppression. The data on the uterus transplant mothers' show that there is no permanent damage because of the immunosuppression. Also, it is temporary exposure, not like in other transplant patients who need it for life.

Q3. Even after uterine transplant since the nerves are not repaired a woman cannot experience the foetal movements or labour pain, so does it really make a woman experience childbirth?

**GT.** Not true. We interviewed the mothers and they told us that they felt like pregnant mothers with same feelings and they could feel their babies kicking and they experienced delivery with the same emotion of any other mother.

The response of Mats Branstromm, the President of the International Society of Uterine transplant to an email about the importance of India's first uterine transplant delivery and the future of this procedure was: 'After 8 deliveries in Sweden, it has been repeated 2 times in USA, once in Brazil, once in Serbia and once in India. Apart from that there are about 10 ongoing pregnancies now in Europe, USA and Asia. Thus, the initial results of Sweden can be repeated at several sites, which is important for the spread of the procedure.'

Despite the successful results, it is worth remembering that uterine transplant is a complicated procedure and is associated with transplant surgery-related risks, immunosuppression and prolonged hospitalization. Hence, there is a need for further studies regarding both technique and ethical issues before the procedure is propagated as a better option than surrogacy and adoption for couples with women (uterus)-related infertility issues.

NEHA CHAUHAN, *Bengaluru, Karnataka*  
ORCID-0000-0003-4705-1959

#### **Board of Governors replaces the Medical Council of India**

On 26 September 2018, the Government of India (GoI) used an ordinance to replace the Medical Council of India (MCI) with a Board of Governors (BoG).

The union finance minister stated that since the term of the elected body of the MCI will be coming to an end in the first week of November 2018, and with the Parliament not in session, this

issue was an area of uncertainty. Hence, the GoI decided to form an interim committee along the lines of the Supreme Court-nominated oversight committee.

The BoG will initially function for a period of 1 year and it will be the only decision-making body until the National Medical Commission (NMC) Bill, 2017 is passed by Parliament. The NMC Bill, 2017 is meant to replace the MCI and is awaiting clearance in Parliament.

The BoG has 7 members, including 3 doctors from the All India Institute of Medical Sciences (AIIMS). They are Dr V.K. Paul, former Head of the Department of Paediatrics and current member of National Institution for Transforming India (NITI AAYOG); Dr Randeep Guleria, Director; and Dr Nikhil Tandon, Head of the Department of Endocrinology, Metabolism and Diabetes.

Two of the other members are also doctors, namely, Dr Jagat Ram, who is the Director, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, and Dr B.N. Gangadhar, Director of the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru.

The remaining 2 are ex-officio members, Dr S. Venkatesh, the Director General of Health Services and Dr Balram Bhargava, the Director General of the Indian Council of Medical Research (ICMR).

Dr Sanjay Shrivastava, former Deputy Director General, Directorate General of Health Services, will be the Secretary General assisting the BoG.

The MCI, which was established in the year 1933, was the final decision-making body for establishing uniform standards of medical education in India. However, during the past decade, it was accused of serious lacunae in its functioning and corruption.

P.M. NISCHAL, *Bengaluru, Karnataka*

---

*The National Medical Journal of India* is looking for correspondents for the 'News from here and there' section. We are particularly interested in getting newswriters from the north and northeast regions of India as well as from other countries. By news, we refer to anything that might have happened in your region which will impact on the practice of medicine or will be of interest to physicians in India. The emphasis of the news items in this column, which are usually from 200 to 450 words, is on factual reporting. Comments and personal opinions should be kept to a minimum if at all. Interested correspondents should contact SANJAY A. PAI at [sanjayapai@gmail.com](mailto:sanjayapai@gmail.com) or [nmji@nmji.in](mailto:nmji@nmji.in)