



## **Q&A with Dr. R. V. Kumar**

### **The Creator of RFQMR Technology and CYTOTRON**



#### **1. What is RFQMR?**

RFQMR stands for Rotational Field Quantum Nuclear Magnetic Resonance. Basically it is to produce Polydimensional Rotating Target Specific Modulated Radio Frequency Radiation in the presence of high instantaneous Magnetic Field. Since these signals are put together and transmitted in the form of packets, and each packet contains unique information and specific quanta of energy, the word Quantum has found a place. Thus, the name Rotational Field Quantum Nuclear Magnetic Resonance or RFQMR, sometime in short called QMR.

#### **2. What is the difference between RFQMR and CYTOTRON?**

RFQMR is the technology and Science behind a process and CYTOTRON is a device that produces and delivers RFQMR. CYTOTRON is patented worldwide by Dr. R. V. Kumar, who has licensed only Scalene Cybernetics Limited to manufacture and market it internationally. CYTOTRON is also the registered Trade Mark of Scalene Cybernetics Limited.

#### **3. How does CYTOTRON work?**

CYTOTRON is a huge machine, which looks like a modern whole body MRI scanner but has a bigger bore. The bore has a gantry, that carries about 864 guns (older versions have 288 guns). Each of the guns produces high instantaneous magnetic field and radio frequency, it also consist of a special near field antenna and parabolic reflectors to deliver these signals. These guns

emit packets or Quantum of programmed signals in time and space that are focused to the target of interest using laser guides. These emitted string of packets, which contain the dosimetry required for a specific medical condition is delivered by the antenna. The beams are then rotated in 360 degrees around the target.

The patient is made to lie down on a traveling bed, the bed travels into the bore of the CYTORTON, the laser guides come on and the technician focuses the guns as per a pre-prepared template. The secondary dosimetry that is prepared by a trained Doctor is initiated from the control room, and the CYTOTRON starts its job. After completing the assigned dose of radiation, the device automatically stops. The patient is then removed out of the bore.

**4. How do these radiation beams work on regenerating a given tissue?**

Injury is common in our body, due to various reasons like disease, accident, chemical pollution, stress and mechanical wear and tear. Regeneration is as common as injury. Regeneration is a repair process that is initiated by the injury itself, injured cells of our body signal out like an SOS in a sinking ship. These signals, to put it in simple terms, consist of information that contains the nature of injury (bacteria, virus or trauma), location of the injury, intensity of damage and specific time available for repair. The body's immune system is the first to arrive, pain signals are transmitted to inform the macroscopic body of the injury, and inflammation cordons the area to prevent further damage. Repair means to replace the destroyed cells with new ones in a very controlled manner, that no unlawful elements enter the newly formed society and corrupt it. Now the cells look into the rule book (DNA) and find out a solution for the problem in hand, the rule book also specifies who is going to head the commission (type of protein), the commissioner then needs a job allocation protocol (protein synthesis), to conduct its duties. The commissioner will also need vehicles (enzymes), stationary (minerals), fuel (cell energy or ATP) and protection (white blood cells or WBC). The

commissioner then waits for the final order that should arrive, to say all is well and ready to start. These orders arrive through a special channel, called trans-membrane potential pathway (TMP pathway), once arrived the work is completed within specified time if all resources are available. What happens after all the preparations are done and the final orders don't arrive because the specific pathway is non functional or on tool-down strike? Like what happens in most commissions, all files pertaining to the repair job will be "Marked Pending" till somebody clears the mess at the pathway and delivers the "final order".

Tranmembrane potential pathway is a function of the difference in the voltage between the inside and outside of cells and governed by precise pumping of negative and positive ions between the inside and outside of the cells. This is an extremely accurate and highly programmed operation and needs tremendous amount of energy. If there are any mismatches in this operation, the pathways get shut and many cellular functions get effected and are the major cause of all non-communicable diseases.

This is where RFQMR comes into play, to take over this operation, regularize the functions of Tranmembrane pathways and successfully deliver the "final order" to the commission to continue the repair job.

**5. That means RFQMR should work in curing all non-communicable diseases?**

Theoretically Yes!, but practically there are many issues, first of all, not much is understood about protein synthesis and TMP pathways. In areas it is understood, it is a long drawn process to create precise algorithms and delivery systems, simulate the outcome and then conduct clinical trials before it can be used to cure diseases. To tell an example, it took more than 15 years to treat the first patient for osteoarthritis, similarly for Cancer. Researchers have to get to the basics, apply their minds, understand the process, the protein

involved, it's structure right up to it's atomic structure and bonding. Though it is a time consuming process, it is worth the trouble, one lifetime may not be enough.

## **6. What is Dosimetry in RFQMR?**

Dosimetry means the process of preparing the dose of various parameters for different indications of use. In RFQMR, there is a primary dosimetry and a secondary dosimetry. Primary dosimetry is an extremely complex process that is done by the researcher; it needs expensive laboratory with advanced tools and resources. Primary dosimetry determines the various parameters required, like modulation characteristics like wave front frequencies, the harmonics, the spin parameters, rotational timings, tissue characteristics like proton density, radio behavior, depth of penetration required etc,. It is the primary dosimetry that determines, pathway signaling for a specific protein believed to be performing certain function that you need to correct.

Primary dosimetry is fixed at the time of manufacturing the CYTOTRON machine. This cannot be changed or altered by any user, as there are locks and interlocks to prevent manipulation of the primary dosimetry. The secondary dosimetry is that part of the dosimetry that needs external inputs that is specific to the patient being treated like certain dimensions of the anatomy of the patients in the fixed proton density dosimetry or gun fire path details in variable proton density dosimetry used in case of treating Cancer. The user can only provide the required inputs from the patient, and the final delivery is automatically controlled by the CYTOTRON.

## **7. What is fixed and variable proton density dosimetry?**

Proton Density or PD is one of the most important parameter required for RFQMR dosimetry. Basically, it is the density of hydrogen atoms that is found in a given tissue type. Proton densities of all normal tissues in the body are known. So any secondary dosimetry is done to apply on a known tissue

type is call “fixed proton density dosimetry”. However, in case of Cancer tissues, the dosimetry is different from that of a known normal tissue, that means two Cancer tissues in two parts of the body of the same patient will be different; hence the CYTOTRON needs to know the proton density of the tumor tissue as well as all the tissues surrounding the Cancer. The CYTOTRON also needs to know the proton density of all the tissue types that comes in the firing lines of the RFQMR guns. This type of dosimetry is called “variable proton density dosimetry”.

## **8. How does CYTOTRON work on Cancer?**

Cancer cells are cells that have lost control and does not obey the rule book (DNA), in the layman’s language, these cells have jumped (mutation) in to a never-ending loop of reproduction, thus multiplying uncontrollably. When they are in a reproductive loop, they are called Cancer but there are many other such loops, like some cells get in to a loop when there is a programming error; they produce the same chemical again and again without regulation, hyper-thyroid cells for example.

The simplest way, I would explain, how CYTOTRON works on Cancer will be as follows;

In our cells, DNA acts just as a computer ’s binary code (*i.e. machine codes*) that finally runs various programs, and the nucleus is like the hard disk (*that stores all these codes*). Imagine that DNA mutations in cancer cells are like software problems (*i.e. virus, system conflicts, etc.*). An increase in software errors (*i.e. mutations*) increases the chaos of the system and slows down the computer’s overall performance. Simple software problems may only affect one program; however, complex software conflicts can severely affect the operating system and may ultimately cause the computer to freeze or hang in the “on ”mode (*i.e. cancer*). Similar to a computer with multiple software problems, cancer cells have at least 5-10 mutations in DNA sequences that

regulate cell growth and can get stuck in the “on” mode. Programs or utilities that try to fix or “debug ”a frozen program work like drug therapies. If the problem is simple, the utilities (*i.e. drug*) can repair the error. However, if the problems are severe, even the most advanced utilities (*i.e. drugs*) will not be able to fix a frozen or hung system. The only way to get the computer (cells) to work again normally is to “reboot” by turning off the power and restarting.

In a way RFQMR uses specific dosimetry to retune cellular signaling programs and restore optimal cell functions. Normal cells restart following RFQMR exposure without a problem because their DNA (*i.e. Assembly codes or machine codes*) is normal. However, when cancer cells try to reboot, the multiple defects in the DNA (*i.e. mutations, chromosome alterations and viruses*) prevent restart, which would cause tumor cells to stop growing or commit suicide, isn't it simple.

**9. You said RFQMR is a form of radiation, aren't radiations harmful?**

All Radiations are classified under the Electromagnetic Spectrum. This includes, visible light, gama rays, x-rays and radio frequency radiations etc. Yes all forms of radiations are harmful, some are more and some are less. The energy delivered by any radiation is proportional to its frequency and power. Frequencies in the higher EM spectrum are extremely harmful as they cause ionization of biological structure. This includes x-rays, gamma rays and the radiations used in radiation therapy for treating cancer. The microwaves used in your kitchen falls under mid-spectrum and they produce heat in the biological tissues. The lower end of the spectrum neither produce heat nor ionize the tissue. The lower end of the spectrum can be used to carry enormous amount of information and minute changes, when compared to high end or mid spectrum. Radiations in the lower end of the spectrum are not harmful in the sense like the higher end of the spectrum, where the ionising radiations can kill biological tissues. Low-end spectrum frequencies can cause

minor physiological effects like depression or pain or some metabolic abnormalities, if uncontrolled.

**10. I have heard of words like Electromagnetic field therapy, electromagnetic wave etc., How is CYTOTRON different from them?**

In the modern world, we all live in an environment filled with all kinds of “Electromagnetic field”, these fields are all around us, they pass through us, but neither they do any serious harm nor do they have any beneficial effects on biological tissue. Any source that produces electromagnetic energy has a field around it. Electromagnetic radiation or RF radiation, on the other hand is different, where radio frequency is radiated using an antenna system, for use by a precise recipient, like how the TV station radiates the RF waves for use by a TV receiver. Both transmitting and receiving device has to be in resonance with each other for the receiver to reproduce what is transmitted. CYTOTRON works as a RF transmitter, it contains special near field antennae, that delivers this radiation precisely to the target (tissue), which is in resonance with the transmitter (Cytotron).

**11. I have heard many of my Doctor friends call CYTOTRON as alternative therapy or Magnetotherapy. What are your comments?**

First of all, the word “Alternative”, is a very relative term and depends on the situation, for example, a patient who has considered to go for a knee replacement surgery, CYTOTRON may become an alternative treatment, while a patient who has chosen to take CYTOTRON treatment, knee replacement may be an alternative. Now let us look at another situation, if a patient of Cancer, who is operated upon may require ionising radiation therapy, will this become an alternative to chemotherapy... So it is a very wrong and misleading terminology, there is nothing called “main therapy” or “alternative therapy” in medicine originally, this is just concocted in recent times.

Secondly, I don't have much knowledge about Magnetotherapy, though I have heard of. It must be something to do with magnets. CYTOTRON has nothing

to do with this therapy; CYTOTRON is a specialised Nuclear Magnetic Resonance Device that is designed for therapeutic purposes.

**12. Are the CYTOTRON treatment received from different Centres the same or can there be some differences?**

Any Centre using a CYTOTRON machine to treat patients based on strict protocols issued by the Centre for Advanced Research and Development (CARD), Bangalore, India, the original developers of CYTOTRON, and having Technicians and Doctors trained and Certified by CARD for operating the machine and preparing dosimetry for treatment, will all have the same standard of treatment.

When you go to any Centre for availing treatment, you should see a board at the Centre, as follows; “ *Treatments given at this Centre using CYTOTRON is as per the protocols issued by the Centre for Advanced Research and Development (CARD). Technicians operating the CYTOTRON machine is trained and certified by CARD, for operational proficiency and safe use of radio frequencies. The Dosimetry for your treatment is performed by our medically qualified staff, who are trained and certified by CARD for Dosimetry and Safety.*”

Besides this please note that as per the protocol, no single location or target is exposed for more than 60 minutes. Also note that in the treatment of arthritis any joint can be treated unilaterally or bilaterally except knee joint which can only be exposed bilaterally. So someone treating a single knee is out of question.

**13. I have come across some CYTOTRON look alike machines, are these machines the same as CYTOTRON, but in different brand names or are these mushrooming to cheat gullible public?**

I too have heard of these machines from various sources, neither my organisation nor me have got anything to do with it. CYTOTRON is a

patented technology and is licensed only to one manufacturer “Scalene Cybernetics Limited” and is marketed only in one name “CYTOTRON”, which is a registered trademark. Our organisation follows international standards and is certified ISO 9001:2000, ISO 13485:2003 and other relevant standards and an organisation of repute having a track record of more than 15 years.

I don’t know the intensions of these “look alike” but it is always good to be careful before accepting to take any treatment from such places. Ask them for details, like the patients they have treated, their MRI scans before and after the treatment, reported by a qualified radiologist. Safety certificate for the safe use of non-ionising radiation issued by competent authority. The only thing I can say is, if in doubt, please report to us, we can clarify from our records if the machine you saw is a CYTOTRON that we would have supplied or you can also report it to the nearest police station, if you feel there is some cheating going on.

**14. Is CYTOTRON still experimental?**

No. CYTOTRON for the treatment of Musculoskeletal Disorders and Terminal Cancer patients are not experimental. All required technical, safety and clinical requirements has been fulfilled and can be freely used for the treatment of patients falling under the above category. However, it is still experimental in treatment of Cancer as a primary therapy, or in combination with existing modalities. It is also experimental in the treatment of Neurological disorders and other non-communicable diseases.

**15. Is there any difference in the Protocol issued by CARD, with respect to gender, age or blood group etc.?**

Do you have different medicines for male/female or Blood group A or B etc., likewise, in CYTOTRON dosimetry or the protocol, there are no differences based on any of the above, mentioned in your question. I would further put it,

CYTOTRON does not differentiate between population groups, race or religion. Remember CYTOTRON treatment is at cellular levels, where none of these matters.

**16. Are there any restrictions while taking CYTOTRON treatment?**

Other than some contraindications, there are absolutely no restrictions. The contraindications are to stop certain group of drugs, that use the same or similar cellular pathways as CYTOTRON, like Calcium Channel Blockers, Proton pump inhibitors, NSAIDs and Alkaloids (also food containing alkaloids) for all regenerative treatments and stop only Calcium channel blockers and proton pump inhibitors for treatment of degenerative treatment like Cancer. CYTOTRON treatment is known to deplete all B- vitamins, so this is supplemented for all patients during the course of treatment.

**17. Can a patient with cardiac stents, orthopedic implants or pacemakers be treated with CYTOTRON?**

None of the implants are a contraindication as long as they are MR-Compatible, that is, you are permitted to take an MRI scan by your radiologist. Pacemakers are absolutely contraindicated, even if it is MR-Compatible. Pacemakers or any other radiosensitive implanted devices should not be allowed within 15 meters of the CYTOTRON machine.

**18. You said, CYTOTRON could cause minor physiological effects like depression or pain or some metabolic abnormalities, if uncontrolled. You also say that there are no side effects. Can you clarify?**

I did not say CYTOTRON causes these effects; I said that low-end spectrum frequencies can cause these effects if “uncontrolled”. The signals produced by CYTOTRON are precisely controlled, ten on board microprocessors and a powerful industrial computer in the CYTOTRON does this job for you. Uncontrolled low-end spectrum frequencies can cause a lot of trouble; this is why I said earlier that one should be careful about look alike machines or so

called “special dosimetry and protocols”. There are no adverse side effects reported in the proper use of CYTOTRON.

- 19. I have read in the press as well as seen on some web sites, that some users of CYTOTRON claim that they do some special dosimetry and follow some special protocol devised by them that give patients a better effect.**

This question has come to me many times, from patients and the profession. As I told earlier, the user of CYTOTRON has no control over the primary dosimetry. The user can only use the secondary dosimetry to provide certain inputs relating to the anatomy of the patients. There is nothing to change here, the only change possible is that, the user may expose the patient for a longer time than recommended for commercial benefits this is unethical, and this can be dangerous to the patients for obvious reasons. In extreme situations, some unscrupulous user of CYTOTRON may manipulate with the protocol, to make the treatment look different from that of others who use CYTOTRON, just for commercial gains, and not to the benefit of the patients. The objective outcome (or effect as you call it) of CYTOTRON treatment can only be established by comparing the MRI scans taken before and three months after the treatment, where the post treatment MRI scan should show significant increase in cartilage thickness when compared to the MRI scan before the treatment.

- 20. Has your organisation licensed the use of CYTOTRON for cancer treatment?**

Yes we have licensed some Centres to use CYTOTRON for the treatment of Terminal Cancer. A Cancer patient is termed Terminal when he or she falls in the following category;

1. The patient has gone through all the standard treatment modalities available for the treatment of his condition, but still the disease is progressing.

2. The patient has an inoperable cancer that cannot be irradiated or cannot be subjected to cytotoxic chemotherapy.
3. A patient who is diagnosed to have Cancer but is not in a position to opt for any existing treatment modalities, due to old age, economic, religious or valid social reasons.

These patients are considered Terminal or End Stage Cancer patients because they have no option, but to circumvent the disease.

To prevent misuse, the license to treat Terminal Cancer patients with CYTOTRON is given with great caution. Centres should have to qualify with the following criteria;

1. The Centre should have the facilities to treat Terminal Cancer patients or should have a tie-up with any Centre having such facilities, to tackle emergency situations.
2. The Centre should have a panel of doctors consisting of an Oncologist, an Onco-surgeon, a Neurosurgeon, a Physician and a Radiologist.
3. The record of treatment, dosimetry and follow-up has to be strictly maintained and can be scrutinized by CARD at any time.

Freshly Diagnosed Cancer Patients are not treated with CYTOTRON currently, as the phase II trial has to be completed and proper protocols have to be put in place before it is used for general public. The Centres licensed for the treatment of Terminal Cancer patients, will counsel fresh cancer patients and advise the best possible treatment available for them currently and refer them to Centres that provide such treatments.

**21. How do you assess the Cancer patient, during the treatment, to see if the CYTOTRON treatment is working or not?**

The first of the signs would be a great relief in pain, and the patients slowly come out of powerful painkillers like morphine etc., the patients appetite increases, and the patient puts on weight. Objectively, post treatment, we use ultra-sound, CT/ MRI scans, and tumor markers, in some cases PET scans. Follow-ups are done initially every 15 days post treatment for 3 months, then monthly for the next 3 months and quarterly thereafter for a year, after which yearly assessments are done.

Ideally, for CYTOTRON treatment assessment, it is best to measure changes in intercellular chemical composition, pH etc., but no such devices are currently available. Our research team is working on non-invasive methods to measure these factors, which I feel and hope may soon be possible.

**22. One last question, which I should have asked you in the beginning; what is the success rate of CYTOTRON treatment in Osteoarthritis and Cancer?**

First of all, it depends on what you mean by “success rate”. Success can be viewed from both subjective side and objective side. Subjective side is how the patient feels and his general quality of life after the treatment and the objective side (more important for science guys like me) is the actual physical measurements that determine the end point of our research. In the studies done on osteoarthritis, the subjective success is about 85% and the objective success is about 98%; this means 85% of the 202 patients treated during the phase II clinical trials, could be pain free, increased movement of their treated joints and could walk longer distance than what they could before the treatment, climb stairs and drive, while 98% of the treated patient had significant growth in their cartilage tissue as proved by the MRI scans three months after treatment. If I look at from the patient point of view, I would say the success rate is 85%, as these patients have achieved what they wanted. If I

look from the research project side, the success rate is 98%, as we could achieve our end-point in 98% of the patients treated.

In case of Terminal Cancer patients, the success rate means a little different from that of osteoarthritis. Terminal cancer patients have a few weeks or months to live. So in research involving Terminal cancer patients, a one-year survival rate is taken. Out of the treated Terminal Cancer patients, the one-year survival rate was 52% (including patients who died of heart attacks kidney failure etc.,) while 92% of the patients had improved quality of life, for whatever period they lived. All our research outcomes are audited by International third party audit and not the mere analysis of the project investigators.