HOPE

A NEW HOPE IN HEALTHCARE

Dr. KM CHERIAN INSTITUTE OF MEDICAL SCIENCES
KALLISSERY, CHENGANNUR
A WORLD CLASS HOSPITAL YOU CAN TRUST
[A Venture of Dr. K M Cherian Institute of Medical Sciences Pvt.Ltd]

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MESSAGE FROM THE CHAIRMAN

Shri. P. M. Sebastian
Chairman
Dr. KM Cherian Institute of Medical Sciences

Greetings!

I extend my warm greetings to all.

Dr. KM Cherian Institute of Medical Sciences has always been at the cutting edge of care. We understand the importance of your well-being and are fully committed to providing you with the highest quality of medical care, cutting-edge technology and compassionate services. At KMC Hospital we give importance for unparalleled and unprecedented measures to bridge gaps and make high quality medical care accessible to all. It gives me immense happiness to be a part of this organization and privilege to be the part of the team that constantly strives to provide the best health care services. We work with a vision to provide affordable world-class healthcare services. We believe constant change is important to bring the best out of anything. Similarly, technology is the change that act as a foundation to provide best medical services. I am so delightful in knowing the periodically publishment of newsletter-HOPE. Together, let us forge a path towards better health and a brighter future.

Regards,

P. M. Sebastian

MESSAGE FROM THE MANAGING DIRECTOR

Rev. Fr. Dr. Alexander Koodarathil
Managing Director
Dr. KM Cherian Institute of Medical Sciences

Greetings!

Dr. KM Cherian Institute of Medical Sciences has always been a forerunner in conducting diverse academic programs alongside its clinical achievements. I express my heartfelt appreciation for the incredible work undertaken by our team every day and night. Your dedication, compassion, and unwavering commitment to patient care are truly admirable. I am privileged for witnessing the first hand impact of your hard work and professionalism. Your skills and expertise are the backbone of our healthcare team. We appreciate your tireless efforts. We continuously explore opportunities for improvement, engaging in ongoing research and adopting innovative practices to enhance our services. As we move forward, we remain committed to our core values of integrity, compassion and excellence.

Regards,

Fr. Dr. Alexander Koodarathil

കാൻസറിന്റെ വഴികൾ

കാർസിനോജൻസ്: നമുക്ക് ചുറ്റും ?

Dr. Sarah J. Easaw
MBBS, MD, FACP
Medical Director & Consultant Oncologist
Oncology Centre, Dr. KM Cherian Institute of Medical Sciences

'പതിവായി ഹെയർ ഡൈ ഉപയോഗിച്ചാൽ കാൻസർ വരുമോ?'
'ഡിയോഡറന്റ്സ് കാൻസറുണ്ടാക്കുമെന്ന് കേൾക്കുന്നു. ശരിയാണോ?
'പഞ്ചസാരയ്ക്ക് പകരം ഉപയോഗിക്കുന്ന ആർട്ടിഫിഷ്യൽ സ്വീറ്റ്നേഴ്സും കാൻസറുമായി ബന്ധമുണ്ടോ?
'ഐ ലൈനർ ഉപയോഗിച്ചാൽ കണ്ണിന് കാൻസറുണ്ടാകുമോ?'
നിത്യോപയോഗസാധനങ്ങളിൽ നിന്നും കാൻസറുണ്ടാകുമെന്ന ഭീതിയില്ലാത്തവർ ചുരുക്കം.

പത്രങ്ങളിലും മറ്റ് വാർത്താമാധ്യമങ്ങളിലും, കാൻസറിന് കാരണമായേക്കാവുന്ന വസ്തുക്കളെക്കുറിച്ചുള്ള റിപ്പോർട്ടുകൾ കൂടെക്കൂടെ കാണാറുണ്ട്. ഇതിൽ പല വാർത്തകളും ശരിയായ തെളിവുകളുടെ അടിസ്ഥാനത്തിലുള്ളതായിരിക്കില്ല. ചിലപ്പോൾ പരസ്പരവിരുദ്ധങ്ങളായ റിപ്പോർട്ടുകൾ തന്നെ കണ്ടേക്കാം ഒടുവിൽ വായനക്കാർക്ക് കൺഫ്യൂഷൻ: 'കാൻസർ വരാതിരിക്കാൻ എന്തൊക്കെ ഒഴിവാക്കണം' മദ്യം? പുകവലി? സെൽ ഫോൺ? കോസ്മെറ്റിക്സ്? ഇതെല്ലാം വേണ്ടെന്നുവച്ചതുകൊണ്ടുമാത്രം കാൻസറുണ്ടാവില്ല എന്ന് ഗ്യാരന്റിയുണ്ടോ?

നമുക്ക് ചുറ്റുമുള്ള, പ്രകൃതിയിൽ കാണുന്നതും മനുഷ്യനിർമ്മിതവുമായ രാസവസ്തുക്കളിൽ കാർസിനോജൻസ് ഉണ്ടോ എന്ന് ശാസ്ത്രജ്ഞന്മാർ നിരന്തരം ഗവേഷണം നടത്തികൊണ്ടിരിക്കുന്നു. ഇന്റർനാഷണൽ ഏജൻസി ഫോർ റിസർച്ച് ഓൺ കാൻസർ (IARC), എൻവയേൺമെന്റ പ്രൊട്ടക്ഷൻ ഏജൻസി (EPA), നാഷണൽ ടോക്സിക്കോളജി പ്രോഗ്രാം തുടങ്ങിയ ഏജൻസികളാണ് കാർസിനോജൻസിനെക്കുറിച്ച് ആധികാരികമായ പഠനങ്ങൾ നടത്തുന്നത്.

IARC മുപ്പത് വർഷങ്ങളായി നടത്തിവരുന്ന ഗവേഷണത്തിന്റെ അടിസ്ഥാനത്തിൽ തൊള്ളായിരത്തിലധികം രാസവസ്തുക്കളെ കാൻസറുണ്ടാക്കുവാനുള്ള സാധ്യതയനുസരിച്ച് പല കാറ്റഗറികളിലായി തിരിച്ചിട്ടുണ്ട്. അതിൽ നൂറെണ്ണം മാത്രമേ കാർസിനോജൻസ് ആയി തീർത്തും സ്ഥിരീകരിച്ചിട്ടുള്ളൂ (ഗ്രൂപ്പ് 1 കാർസിനോജൻസ്). ഈ ലിസ്റ്റിലുള്ള മറ്റ് ഒട്ടുമുക്കാലും കെമിക്കൽസ്, ഗ്രൂപ്പ് 2 മുതൽ 4 വരെയുള്ള കാറ്റഗറികളിലാണ്. അതായത് ഇപ്പോൾ നിലവിലുള്ള പഠനങ്ങളുടെ നിഗമനം ഇവയെ കാർസിനോജൻസ് ആയി സംശയിക്കാമെങ്കിലും അങ്ങനെ തീർത്തും

മുദ്ര കുത്തുവാൻ പര്യാപ്തമല്ല എന്നർത്ഥം.

ഗ്രൂപ്പ് 1 കാർസിനോജൻസ് :

ആൽക്കഹോൾ മുതൽ വൈനൈൽ ക്ലോറൈഡ് വരെ ഈ ലിസ്റ്റിലുൾപ്പെടുന്നു. അവയിൽ ചിലത് മാത്രമേ ഇവിടെ പരാമർശിക്കുന്നുള്ളൂ (കാർസിനോജൻസിനെക്കുറിച്ചുള്ള കൂടുതൽ വിവരങ്ങളും സമ്പൂർണ്ണമായ ലിസ്റ്റും www.iarc.fr, http://ntp.niehs.nih.gov, www.epa.gov എന്നീ വെബ് സൈറ്റുകളിൽ ലഭ്യമാണ്)

ആൽക്കഹോൾ: സ്ഥിരമായി മദ്യപിക്കുന്നവർക്ക് oral cavity, Pharynx , Larynx (voice box), esophagus എന്നിവിടങ്ങളിൽ കാൻസറുണ്ടാകുവാനുള്ള സാധ്യതയുണ്ട്. മദ്യപാനത്തിനൊപ്പം പുകവലിയുമുണ്ടെങ്കിൽ ഈ റിസ്ക് ഏറെ അധികമാവും, കൂടാതെ കരളിനെ ബാധിക്കുന്ന കാൻസർ, ബ്രസ്റ്റ് കാൻസർ എന്നിവയും ആൽക്കഹോളുമായി ബന്ധപ്പെട്ടിരിക്കുന്നു. എഥനോളിനു പുറമെ മദ്യത്തിലടങ്ങിയിരിക്കുന്ന മറ്റ് മാലിന്യങ്ങളും (അസറ്റാൽഡിഹൈഡ്, അഫ്ളാടോക്സിൻസ്, ആഴ്സനിക് തുടങ്ങിയവ) കാർസിനോജൻ ആയി മാറുന്നു.

അഫ്ളാടോക്സിൻ: ആസ്പർജില്ലസ് ഗ്രൂപ്പിലുള്ള ചില തരം ഫംഗസുകൾ ഉത്പാദിപ്പിക്കുന്ന ഒരു രാസവസ്തുവാണ് അഫ്ളാടോക്സ്സിൻ. അഫ്ളാടോക്സിൻ ലിവർ കാൻസറുണ്ടാക്കുമെന്ന് സംശയാതീതമായി തെളിയിച്ചിട്ടുണ്ട്.

അറേക നട്ട് (areca nut): നാലും കൂട്ടി മുറുക്കുന്ന മുത്തശ്ശന്മാരെയും മുത്തശ്ശിമാരെയും ഓർമ്മയില്ലേ? പുകയിലയ്ക്ക് പുറമെ മുറുക്കാനിൽ ഉപയോഗിക്കുന്ന പാക്കും (അടയ്ക്ക) ഒരു ഒന്നാംകിട കാർസിനോജൻ ആണ്. ദീർഘകാലം പുകയിലയും പാക്കും ചവയ്ക്കുന്നത് വായ്ക്കുള്ളിൽ കാൻസറുണ്ടാകുവാൻ കാരണമാവും

ബെൻസീൻ: ഗ്യസൊലീൻ, കൽക്കരി പെട്രോളിയം തുടങ്ങിയവയിലുള്ള ഒരു സോൾവേന്റ് ആണ് ബെൻസീൻ എന്ന രാസവസ്തു. തുടർച്ചയായി ബെൻസീൻ കലർന്ന വായു ശ്വസിക്കുന്നവർക്ക് ലുക്കീമിയ (രക്താർബുദം) ഉണ്ടാകുവാനുള്ള സാധ്യതയുണ്ട് ഗ്യാസ് സ്റ്റേഷനുകൾ, ഹെവി ട്രാഫിക് ഉള്ള സിറ്റികൾ എന്നിവിടങ്ങളിലെല്ലാം അന്തരീക്ഷത്തിലെ ബൻസീനിന്റെ അളവ് കൂടുതലാണ്.

ആസ്ബസ്റ്റോസ്: കാർസിനോജൻസിന്റെ കൂട്ടത്തിൽ ആസ്ബസ്റ്റോസിനുള്ള സ്ഥാനം ഏറെ പ്രധാനമാണ് കെട്ടിടനിർമ്മാണത്തിന് വൻതോതിൽ ഉപയോഗിച്ചു കൊണ്ടിരുന്ന ആസ്ബസ്റ്റോസ് ഫൈബ

റുകൾ കൈകാര്യം ചെയ്യുന്നവരിൽ ശ്വാസകോശകാൻസറിനു പുറമെ മീസോത്തിലിയോമ(mesothelioma ശ്വാസകോശത്തിന്റെയും ആമാശയത്തിന്റെയും ലൈനിംഗിന് ഉണ്ടാകുന്ന കാൻസർ) കൂടുതലായി കണ്ടുവരുന്നുവെന്ന് സ്ഥിരീകരിച്ചിട്ട് മുപ്പതുവർഷത്തിലധികമായി. കെട്ടിടനിർമ്മാണത്തിനു
പുറമെ ഷിപ് യാർഡ്, ടെക്സ്റ്റൈൽസ്, റൂഫിംഗ് എന്നീ മേഖലകളിൽ ജോലി ചെയ്യുന്നവർക്കും ആസ്ബസ്റ്റോസ് കലർന്ന വായു ശ്വാസിക്കുന്നത് വഴി കാൻസറുണ്ടാകുവാനുള്ള സാധ്യതയുണ്ട്. ഇക്കാരണത്താൽ അമേരിക്കയിൽ ആസ്ബസ്റ്റോസ് ഖനികൾ 1970 മുതൽ അടച്ചുപൂട്ടുവാൻ തുടങ്ങി. ഇന്ന് ആസ്ബസ്റ്റോസ് ഖനനം തീർത്തും ഇല്ലാതാക്കയിട്ടുണ്ട്.
കാൻസറിനുപറമെ ശ്വാസകോശത്തെ ബാധിക്കുന്ന ആസ്ബസ്റ്റോസിസ് എന്ന രോഗവും ആസ്ബസ്റ്റോസുമായി ബന്ധപ്പെടുന്നവർക്ക് ഉണ്ടാവാറുണ്ട്. ഇക്കൂട്ടർ പുകവലിക്കുക കൂടി ആണെങ്കിൽ കാൻസറിനുള്ള സാധ്യത പതിന്മടങ്ങ് വർദ്ധിക്കുന്നു.

പുകയില: സിഗറ്റിലും മറ്റും അടങ്ങിയിരിക്കുന്ന ടൊബാക്കോയിൽ 2500 ലധികം രാസവസ്തുക്കളുണ്ട്. അതിൽ ഒട്ടുമുക്കാലും കാർസിനോജൻസ് തന്നെ. സ്ഥിരമായി പുകവലിക്കുന്നവർക്ക് ശ്വാസകോശകാൻസറിനുപുറമെ മൂത്രാശയം (urinary bladder), oral cavity, pharynx, larynx, പാൻക്രിയാസ് മുതലായി അവയവങ്ങളിലുള്ള കാൻസറും ഉണ്ടാകുവാനുള്ള സാധ്യത വളരെ കൂടുതലാണ. പുകവലിക്കുന്നവരുമായി സമ്പർക്കത്തിലുള്ളവർക്ക് സെക്കൻഡ് ഹാൻഡ് സ്മോക്ക് വഴി കാൻസറുണ്ടാകാം.

വൈറസുകൾ: ചിലതരം വൈറസുകൾ കാൻസറുണ്ടാക്കുന്നുവെന്ന് തെളിയിക്കപ്പെട്ടിട്ടുണ്ട്. ഗർഭാശയനാളത്തിന്റെ കാൻസർ (cervical cancer), പ്രധാനമായും HPV (Human Papilloma Virus) ഇൻഫെക്ഷൻ മൂലമാണുണ്ടാവുന്നത്. ലൈംഗികബന്ധത്തിലൂടെ ഈ വൈറസ് മറ്റുള്ളവരിലേക്ക് പകരാം.
HPV ഇൻഫെക്ഷനുള്ളവർക്കെല്ലാം പ്രത്യേകിച്ച് രോഗലക്ഷണങ്ങളൊന്നും കാണണമെന്നില്ല. അതിനാൽ ഇത് തടയാനും പ്രയാസം തന്നെ തൊണ്ടയ്ക്കുണ്ടാകുന്ന കാൻസറും HPV യുമായി ബന്ധപ്പെട്ടിരിക്കുന്നു. HPV വൈറസിനെതിരെയുള്ള വാക്സിൻ പ്രചാരത്തിലുണ്ട്. പെൺകുട്ടികൾക്ക് (ആൺകുട്ടികൾക്കുമാവാം) ടീനേജ് പ്രായമെത്തുന്നതിനുമുമ്പെ HPV വാക്സിൻ നൽകുന്നതുവഴി HPV ഇൻഫെക്ഷനും ഗർഭാശയനാള കാൻസറും തടയാം.

കരളിനെ ബാധിക്കുന്ന ഹെപ്പറ്റൈറ്റിസ് B, ഹെപ്പറ്റൈറ്റിസ് C എന്നീ വൈറസുകൾ ലിവർ കാൻസറിന് വഴിതെളിക്കും. രക്തത്തിലൂടെയും ശരീരത്തിലെ മറ്റ് ദ്രാവകങ്ങളിലൂടെയുമാണ് ഈ വൈറസുകൾ പകരുന്നത്. എയ്ഡ്സ് വൈറസ് (HIV), HTLV-1, എബ്സ്റ്റീൻ ബാർ വൈറസ് തുടങ്ങിയവയും കാൻസറുമായി ബന്ധപ്പെട്ടിരിക്കുന്നു.

കളറിംഗ് ഡൈയിൽ അടങ്ങിയിരിക്കുന്ന ബെൻസിഡീൻ, കൽക്കരി, ടാർ, കരിയടുപ്പിൽ (cole-oven) നിന്നും വമിക്കുന്ന പുക, ചൈനീസ് രീതിയിൽ ഉപ്പിലിട്ട മത്സ്യം (salted fish), പ്ലൂട്ടോണിയം, റേഡിയോ ആക്ടീവ് പദാർത്ഥങ്ങൾ, അൾട്രാ വയലറ്റ് കിരണങ്ങൾ ഇവയെല്ലാം ഗ്രൂപ്പ് 1 കാർസിനോജൻസിന്റെ ലിസ്റ്റിൽ ഉൾപ്പെടുന്നു.
IARC, EPA, നാഷണൽ ടോക്സിക്കോളജി പ്രോഗ്രാം തുടങ്ങിയ ഏജൻസികൾ കാർസിനോജൻസ് ആവാൻ സാധ്യതയുള്ള വസ്തുക്കളുടെ ഒരു നീണ്ട ലിസ്റ്റ് പ്രസിദ്ധപ്പെടുത്തിയിട്ടുണ്ട്.

കാർസിനോജൻസുമായി സമ്പർക്കമുണ്ടാകുന്ന എല്ലാവർക്കും കാൻസറുണ്ടാവണമെന്നില്ല. കാരണം, ഓരോ വ്യക്തിയുടെയും ജനിതക
ഘടന വ്യത്യസ്തമാണെന്നതുതന്നെ. ഏത് അളവിൽ, എത്ര നാൾ, എക്സ്പോസ്ഡ് ആയി എന്നതും വളരെ പ്രധാനപ്പെട്ട ഘടകമാണ്.

ജോലിസ്ഥലത്തോ അല്ലാതെയോ കാർസിനോജൻസുമായി ദീർഘകാലം സമ്പർക്കം പുലർത്തേണ്ടിവരുന്നവർ, യഥാസമയം വൈദ്യപരിശോധന നടത്തേണ്ടതും അത്യാവശ്യമാണ്. കാൻസർ തടയുന്നതുപോലെ തന്നെ പ്രധാനമാണ്, പ്രാഥമികഘട്ടത്തിൽ രോഗം നിർണ്ണയിക്കാൻ കഴിയുന്നതും.

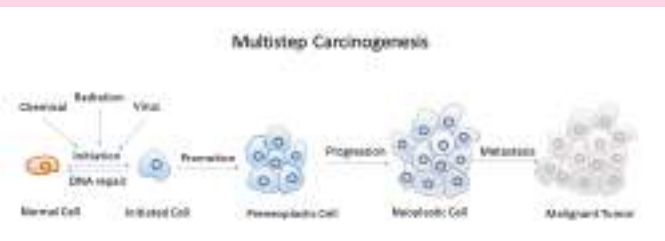
കാൻസറും നിത്യോപയോഗസാധനങ്ങളും: സത്യമോ മിഥ്യയോ?:

സെൽ ഫോൺ ഉപയോഗിക്കുന്നവർക്ക് ബ്രെയിൻ കാൻസർ?:
സെൽ ഫോണിൽ നിന്നുമുള്ള ഇലക്ട്രോ മാഗ്നറ്റിക് കിരണങ്ങൾ ശരീരത്തിലേക്ക്
പ്രവേശിക്കാനുള്ള സാധ്യതയുണ്ട്. പക്ഷെ സെൽ ഫോണും കാൻസറും തമ്മിലുള്ള ബന്ധം സംശയാതീതമായി തെളിയിക്കപ്പെട്ടിട്ടില്ല.

ഹെയർ ഡൈയും കാൻസറും?: മുടിയുടെ നിറം മാറ്റാവാനുപയോഗിക്കുന്ന ഹെയർ ഡൈയിൽ നിരവധി കെമിക്കൽസ് അടങ്ങിയിട്ടുണ്ട്. പതിവായി ഹെയർ ഡൈ ഉപയോഗിക്കുന്നവർക്ക് ലിംഫോമാ (ലിംഫ് ഗ്രന്ഥികളുടെ കാൻസർ) ഉണ്ടാകുവാനുള്ള സാധ്യതയുണ്ടെന്ന് മുൻകാലപഠനങ്ങൾ
തെളിയിച്ചതിനാൽ എഴുപതുകൾക്കുശേഷം ഡൈ ഉണ്ടാക്കുവാനുപയോഗിക്കുന്ന രാസവസ്തുക്കളിൽ മാറ്റം വരുത്തി. ഇപ്പോൾ നിലവിലുള്ള ഉൽപ്പന്നങ്ങൾക്ക് കാൻസർ റിസ്ക് ഉള്ളതായി അറിവില്ല.

ആന്റി പെർസ്പിറന്റ്സ് മൂലം ബ്രസ്റ്റ് കാൻസർ?: വിയർപ്പ് തടയാനുപയോഗിക്കുന്ന ഡിയോഡറന്റ്സ്, ആന്റി പെർസ്പിറന്റ്സ് എന്നിവയുടെ ഉപയോഗം സ്തനാർബുദത്തിന് കാരണമാവാം എന്ന വാർത്ത പ്രചാരത്തിലുണ്ട്. പക്ഷെ നാഷണൽ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് ഹെൽത്ത്, നാഷണൽ കാൻസർ
ഇൻസ്റ്റിറ്റ്യൂട്ട് എന്നിവിടങ്ങളിലെ ഗവേഷണഫലങ്ങൾ മറിച്ചാണ്. ആന്റി പെർസ്പിറന്റ്സും ഡിയോഡറന്റ്സും കാൻസറുമായി ബന്ധമില്ല എന്നാണ് FDA (Food & Drug Administration) യുടെയും നിഗമനം.

സൗന്ദര്യവർദ്ധകസാമഗ്രികളും കാൻസറും: മോയിസ്ചറൈസർ, ഫൗണ്ടേഷൻ, ഐ ലൈനർ, ലിപ്സ്റ്റിക്, നെയിൽ പോളിഷ്... ആധുനികവനിതകൾക്ക് ഒഴിവാക്കാൻ വയ്യാത്ത ഈ കോസ്മറ്റിക്സിൽ നിരവധി രാസവസ്തുക്കളുണ്ട്. പാരബൻസ് (Parabens) എന്ന ഗ്രൂപ്പിൽ പെടുന്ന കെമിക്കൽസ്, ബ്രസ്റ്റ് കാൻസറിന് വഴിതെളിക്കാൻ സാധ്യതയുണ്ട്. (www.safecosmetics.org, skin deep എന്നീ വെബ് സൈറ്റിൽ വിവിധ സൗന്ദര്യവർദ്ധക



Acute myocardial infarction with cardiogenic shock

Risk stratification and role of mechanical circulatory support devices

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Cardiogenic shock (CS) is a primary cardiac disorder that result in clinical and biochemical evidence of tissue hypoperfusion due to extensive damage of myocardium due to acute myocardial infarction (AMI). It is characterised clinically by a systolic blood pressure less thatn or equal to 90mmHg for greater than or equal to 30 minutes and urine output less than or equal to 30mlo / hr or cool extramitres and hemodynamically by depressed cardiac index (less than or equal to 2.2L/min/M2 body surface area and an elevated pulmonary capillary wedge pressure greater than 15mmHg.
Approximately 5-8% of ST elevation myocardial infarction (STEMI) and 2-3% of non ST elevation myocardial infarction (NSTEMI) cases can result in cardiogenic shock. CS associated with AMI (AMI – CS) can lead to a mortality rate of nearby 40% at 30 days and 50% at 1 year1.
Inspite of widely available cardiology specific intensive care units, marked improvement in percutanous and surgical revascularization and increased availability of mechanical circulatory support, the mortality rate for CS has not shown significant decline2,3.

Risk stratification in AMI – CS
Many classification systems have been developed for risk-stratification of CS.

1. **Killip and Kimbel**: In 1957 Killip and Kimbel put forward a classification based on the severity of heart failure in AMI. It consists of 4 classes.

Class I – No evidence of heart failure.
Class II – Presence of mild to moderate heart failure characterised by rates (crepitations) in lungs, so gallop and jugular venous congestion
Class II – Overt pulmonary edema
Class IV – Cardiogenic shock (with low blood pressure, cold clamy skin and reduced urine output.

2. **Forrester classification**: In 1976 Forrestor etal developed a classification system for AMI based on their hemodynamic profile, specifically cardiac index (CI) and pulmonary artery wedge pressure (PAWP) into 4 profiles.

Profile I (Warm and dry) Normal cardiac index (CI >2.2L/min/M2) and normal PAWP (<18mmHg) indicates adequate perfusion and no congestion
Profile II (Warm and wet) – Normal CI and elevated PAWP (>18mmHg). This indicates adequate perfusion, but with signs of congestion
Profile III (Cold and dry) – Low CI (2.2L/min/M2) and normal PAWP. Indicates impaired perfusion but no congestion.
Profile IV (Cold and wet) – Low CI and elevated PAWP indicates both impared perfusion and congestion.
This classification was used for guiding treatement (use of inotropic agents, vaso pressors and address volume status)
Eventhough it effectively categorizes patients based on perfusion and congestion, its ability to accurately predict cardio renal events or other specific complcations in advanced stages is not clear. Further more it relies on invasive hemodynamic measurement, which are not always readily available
Later, 2 risk scores (IABP – Shock II and card – shock) were developed to evaluate short term mortality, but did not became popular

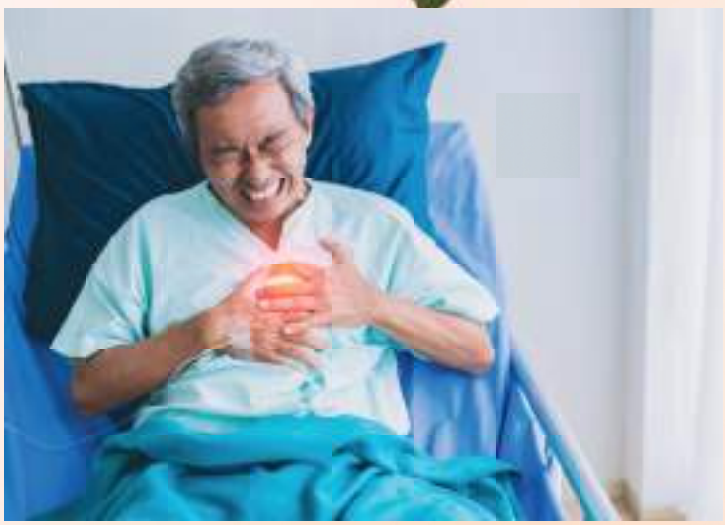
3. **Card-Shock Score**: It utilizes seven variables assessed at admission to categorize patients in to low (0-3 points) Intermediate (4-5 points) or high risk (6-9 points) groups5.The variables were age, eGFR, blood lactate level, confusion on admission, left ventricular ejection fraction, previous myocardial infarction or coronary artery bypass grafting and etiology of cardiogenic shock (ACS vs non ACS). The score has demonstrated good predictive performance in assessing in hospital mortality in patients with shock.

4. **The IABP – SHOCK II Score**: It is based on six variables. Age (greater than 73 years), prior stroke, admission glucose (greater than 191mg/dL) S. Creatinine (>1.5mg/dl) Lactate (>5mm/L) Post – PCI TIMI flow grade (less than 3). Categorized in to 3. Low risk (0-2 points) Intermediate risk (3-4 points) and high risk (5-9 points)

5. **TIMI risk score for ST elevation AMI**: This is a tool developed to assess the risk of mortality and other adverse events (heart failure, cardiogenic shock) in patients with STEMI. It is based on eight clinical indicators assessed at the time of presentation the score helps to categorise patients into risk levels (low, medium or high)

6. **Sequential Organ Failure Assessment Score (SOFA#SCORE)**: The SOFA SCORE was developed in 1994 to assess the extent of organdysfunction / failure in the patient population as quantitatively and objectively as possible. It evaluates six organ systems, each receiving a score from normal to 4 (most abnormal). Respiratory, cardiac vascular, hepatic, coagulation, renal and neurological. A higher SOFA SCORE indicates more severe organ dysfunction. The score provides an objective measures of the progression of multi organ failure in the context of AMI – CS guiding clinical decision. The score in re-calculated every 24hrs in the ICU to track a patient's condition and predict outcome

7. **The SCAI-SHOCK stage classificaiton**: In 2019 the society for cardiac vascular intervention released a classification system for evaluating severity of CS (Later in 2022 an update of this system also was



released). This system consists of 5 stages.
Stage A (No shock) At risk, patient has a cardiac condition with risk for CS. But not symptomatic.
Stage B (Pre shock): Clinical evidence of hemodynamic instability, but no hypo perfusion.
Stage C (Established shock): Clinical evidence of hypo perfusion requiring intervention
Stage D (Worsening shock): Worsening hemodynamics and lactate. Failed initial intervention
Stage E (Refractory shock): Actual or impending circulatory collapse.
This classification system help to assess the severity of CS, guide treatment decisions and predict patient outcomes. The classification has been validated in multiple studies, demonstrating its effectiveness in risk stratification for patients with CS. Higher SCAI stages are consistantly associated with increased - in hospital and post discharge mortality.

Role of mechanical supportive devices in the management of AMI-CS.

The use of vasoactive drugs (inotropes) is the first line of treatment in almost all patients with CS. These agents increase myocardial contractility by which increase cardiac output and blood pressure (BP), thereby maintain end organ perfusion.

1. Vasopressors: Are agents with vasoconstrictive effects that increase BP (eg Vasopressor and Phenylephrine)
2. Inopressors: These drugs have dual actions – vasopressor and inotropic effects (eg Epinephrine, norepinephrine and Dopamine).
3. .Inodilators are group vasoactive agents which have inotropic and vasodilatory properties. (Eg. Dobutamine, Milrinone and levosimendan)

Data on comparative efficacy of different inotropic agents in CS is limited. No single agent has proves clear superiority. They are used singly or in different combinations as per situation demands.

Vaso active inotropic score (VIS): It is a numerical score used to quantify the degree of hemodynamic support provided to a patient with CS, following AMI-CS. Higher VIS values reflect greater dependence on vasoactive drugs, having a more challenging hospital course with increased in - hospital and followup mortality9.

Early revascularization by means of coronary angioplasty or CABG is byfar the most effective treatment strategy for early and long term survival for patients with AMI-CS. This has became evident by the shock trial. In this trial patients with AMI-CS was randomly asigned to emergency revascularization (PTCA / CABG) or initial medical stabilization. Although overall mortality at 30 days did not differ in both groups (46.7% Vs 56%; P=0.11), the 6 months mortality was lower in the early revascularization group than medical therapy group (50.3% Vs 63.1%; P=0.027)10. Moosvi AR etal reported that revascularization (PTCA / CABG) is associated with improved survival in AMI-CS compared with medical stabilization this improvement in survival is most evidence of revascularization is performed early (within 24hrs of onset of CS).

Mechanical support devices for CS include Intra Arotic Balloon Pumps (IABP), Extra Corporeal Membrane Oxygenation (ECMO) and percutanous ventricular assist devices (PVAD) like the impella. These devices improve blood flow, support organ perfusion and reduced the hearts work load, acting as a bridge to heart recovery11.

IABP

In 1968 Dr. Adrian Kantro Witz and collegues reported the first successful use of IABP, in the treatment of CS. Since then it has been widely used in cath labs for managing percutaneous coronary interventions in AMI with CS. This device work by inflating a long balloon in the descending aorta (introduced through femoral artery) during diastole and deflating during systole, timed by a machine that monitors ECG. When the balloon is inflated, it helps to increase blood pressure in aorta and help coronary perfusion. There can be an augmentation of cardiac output by approximately 0.5-1.0L/min when the balloon is deflated, it creates low pressure in aorta that reduces resistance and thereby after load and cardiac work strain.

IABP was also used for AMI with CS with mechanical complications like, acute mitral regurgitation and acute ventricular septal rupture. But its use is not recommended is patient with moderate to severe AR, Aortic dissection and aortic Aneurysm.

Initial studies between 1970 and 1990 reported that use of IABP is beneficial to provide hemodynamic support in the form of an increase in cardiac index, decrease in pulmonary capillary wedge pressure and decrease in multiorgan dysfunction. But subsequent trials have shown negative results. In the SHOCK II trial, patients with AMI.CS were randomised in IABP (n= 301) vs no IABP (n=299). All patient received early revascularization and best possible medical supportive therapy. At 30 days, all cause mortality had occurred in 39.7% of the IABP group Vs 41.3% of the non IABP group (P=0.69). More over IABP did not demonstrate any positive effects is time to achieve hemodynamic stability, length of intensive care unit stay, peripheral tissue / organ perfusion as measured by S.Lactic Acid levels and the dose of Catecholamine required to maintain adequate organ perfusion.
A followup study of the shock II trail (IABP- SHOCK II trial) found that there was no benefit in the primary end point of mortality at 30 days 3 and 12 months12. Based on the IABP shock II trial results routine use of IABP in AMI-CS has been down graded from class 2 (level of evidence A) in the 2013 STEMI guideline to class 3 in the 2025 ACC/ AHA / ACEP / NAEMSP / SCAI guidelines for managed of

ACS. Routine IABP use in AMI-CS has been carried a class III recommentation in European guidelines since 2014.

ECMO

ECMO is a life support system used when a patient's heart and lungs are unable to function adequately on their own. The Veno-Arterial (V-A) ECMO acts as a heart – lung bypass machine circulating blood outside the body adding oxygen, removing carbon dioxide and then returning the blood to the patient, thus allowing the patients heart and lungs to rest and potentially recover.

The usefulness of V-A ECMO in AMI-CS was studied in various trials13.

Studies showed that the benefit was better, when the ECMO was initiated early in the course of cardiogenic shock.

Micro Axial Flow Pumps

Impella is a catheter based micro axial flow pump. It is a short term device insereted in to the left ventricle (LV), actively pumping blood out of the heart in to the aorta. It unloads the LV decreasing LV filling pressures and increases cardiac output, improving hemodynamic stability in patients with AMI-CS. There are different types of impella which offers different levels of hemodynamic support. Impella 2.5 (2.5L/min) Impella CP (3.0-4.0L/min) Impella 5.0 (5.0 L/min) and impella 5.5 (>6.0 L/min).

Few small previous studies (Impella – STIC, IMPRESS in Severe shock, ISAR- shock (all IABP vs IMPELLA) etc did not show any mortality benefit of micro axial flow pumps in AMI-CS.

In a meta analysis of 5 randomised trails (Thiele etal, n=503) with 6 months mortality data compared early routine active mechanical supportive devices use vs control in patients with AMI-CS. No significant difference were observed for LV unloading devices Vs control, no mortality benefit (p=0.075). Major bleeding and vascular complications were more with the use of MCS14.

In the recent DanGer – shock trial, patients with AMI-CS were randomised in to (1) micro axial flow pumps group (n=179) and (2) to standard care group (n=176). Death from any cause occurred in 82/179 patients (45.8%) in the micro axial group and 103/176 (58%) in the standard case group (p=0.04). A composite safety end point (severe bleeding, limb ischemia, hemolysis, device failure or worsening aortic regurgitation) occurred in 43 patient (24.0%) in group I and 11 (6.2%) in group 2. So the conclusion of the study was that the routine use of a micro axial flow pump with standard care in patient with AMI-CS led to a lower risk of death from any cause at 180 days than standard care alone. There was a higher incidence of adverse events when the micro axial pump was used15.

Based on the DanGer – shock trial results the use of micro axial flow pumps in AMI-CS received an upgraded class II (level of evidence A) recommendation (use is reasonable) in the 2025 ACC / AHA / AECP / NAEMSP / SCAI guidelines for the management of ACS from class II (Level of evidence B) recommendation of 2013 guidelines.

conclusion

In conclusion, optimum use of vasoactive drugs and early revascularization remains the corner stone in the management of AMI-CS. Available data regarding the mortality benefit of various mechanical supportive devices are uncertian. A multi disciplinary approach, early initiation of mechanical supportive devices tailored to the severity of CS is important. Further research are vital to optimise device use and improve patient survival.

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CESAREAN SCAR PREGNANCY – RISING INCIDENCE AND CHALLENGES

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INTRODUCTION

Caesarean scar pregnancy (CSP) refers to a pregnancy that is implanted on or in a scar from a prior caesarean birth. CSP occurs in approximately 1 in 2000 pregnancies and accounts for approximately 6 percent of abnormally implanted pregnancies among patients with a prior caesarean birth.

Type - 1

On-the-scar – Implantation of the CSP on the well-healed scar of a previous caesarean birth (also termed "endogenous" implantation)

Type – 2

In-the-niche – Implantation of the CSP within the defect or "niche" of an incompletely healed scar (also termed "niche pregnancy," or "exogenous"

There are two types of caesarean scar pregnancy
The mechanism for implantation of a CSP is unclear; various theories include:

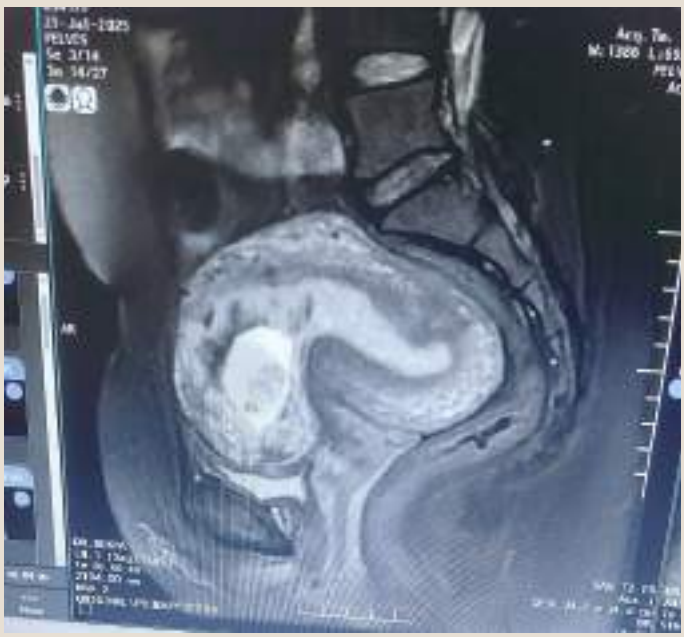
- the endogenous migration of the embryo through either a wedge defect in the lower uterine segment or a microscopic fistula within the scar
- invasion of placental villi into the uterine wall at a point of scar dehiscence
- low oxygen tension of scar tissue attracting implantation of the fertilized oocyte

Some experts believe that CSP is a precursor to, and shares a common histology with, placenta accreta spectrum (PAS) and that they are a continuum of the same disease. Both involve the placenta attaching to or invading the myometrium, almost always in an area of scarring caused by previous uterine surgery.
Risk factors of CSP includes -previous CSP - the risk of recurrent CSP may be more common than previously thought and ranges from 5 to 40 percent. Other factors that may contribute to the risk of CSP in patients with a prior caesarean birth include - Other previous uterine surgery (eg, dilation and curettage [D&C], endometrial ablation, myomectomy), Manual removal of the placenta, In vitro fertilization.
Clinical outcomes of CSP include uterine rupture, enhanced myometrial vascularity and delivery of a neonate followed by caesarean hysterectomy.
As majority of the patients are asymptomatic, diagnosis is mainly via imaging. CSP is diagnosed via USG and in case of doubt MRI can be ordered to rule out co existing PAS. Various management options include – medical management with methotrexate, intra sac injection of kcl or methotrexate, dilatation and curettage and surgery. Management should be individualised depending on the clinical condition of the patient and type of cs pregnancy.

Recently our department had 5 caesarean scar pregnancies in the last 6 months – out of which 3 cases were managed surgically and two medically. Here we are discussing how we have managed a live 10 weeks cs pregnancy with doubt regarding bladder adhesion.

CESAREAN SCAR PREGNANCY WITH DOUBTFUL BLADDER ADHESION

We had a patient – G4P2L2A1/ previous 2 lscs with LMP on 01/06/25 and gestational age – 8 weeks+1 day. She had positive upt test and h/o spotting pv for 1 day. She had USG in UAE which showed CSP hence self-referred to our hospital for further management. Patient was



stable while admission. In house USG showed acute retroflexed uterus with live scar ectopic (7.1 x 6.2 cm) of 10 week size. Scar ectopic was bulging outside and abutting abdominal wall and urinary bladder – possibly adherent. We ordered MRI abdomen plus pelvis to rule out bladder adhesion which showed - uterus enlarged and retroflexed with gestational sac with single fetus in the anterior uterine wall embedded at the level of previous caesarean scar. Gestational sac complex appears to extend anteriorly up to the serosal margin with marked thinning of myometrial lining(<1mm). Few foci of serosal interruption noted at the interface with posterior urinary bladder, largest defect -6.5 mm.

We gave her one dose of Methotrexate 80 mg im stat and decided for surgical management via Laparotomy. Intra operative findings include - Uterus enlarged to 6-8 weeks size with products of conception implanted at the site of previous scar with no invasion into the bladder. Bilateral internal iliac artery ligation done. Proceeded with excision of products of conception. Uterine cavity entered – myometrium with serosa approximated. Bilateral salpingectomy done.
Postoperative period was uneventful, and patient discharged on POD-3.

WITHIN A STROKE

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Silence was at a distance. I was slowly moving towards it as I slipped into the much needed shut eye after a long fought day. I have always longed for a peaceful night of sleep. Can't remember the last time I had one! As I lay down waiting for the gentle embrace of tranquility, my thoughts wandered across the day I endured to be here, now! The radiating smiles, the struggles of the destitute and more commonly, the stressed out facies of the working class.

As I soaked in Hans Zimmer's orchestral masterpiece "Time", my mind became one with silence. Sleep had found me, alas! Silence is vocal, yet too defiant to our mind. I wasn't sure what happened in between these thoughts. The sound progressively amplified, developed a character, appeared dynamic, and each frequency was distinguishable to my lending ears. It filled the air like ripples on water, reverberating all around and within. I was gasping for air, while being drowned in it. A feeling of lightness, as if I was floating in thin air. But something was not letting me drift afloat. I tried to wiggle myself out of this feeling. But it just didn't work! I struggled again, and again, and again. I felt a constant pull on my face, which was beyond my resistive control. I wanted to touch my face, to see if it was my mind playing games with me. That's when a gush of reality hit me, the startled awakening of my consciousness. The light that sneaked through the slits on my window blind illuminated the ceiling, as I opened my eyes of consciousness to take control over my body.

One side of my body felt heavier than the other for the first time in my life. I tried to move my hand, but it refused to comply. My legs weren't any better either. It felt like a part of me was buried alive. I was frightened, way more than the things that scared me till date. I felt my mind gently crushing against the walls it live in, as my consciousness became clouded. My vocal cords tried to tense up, to cry out loud, but my voice refused to express itself. Here I am, lying on the bed, not able to move, not able to talk, dreading the inevitable.

I gazed at my phone connected to the charger on the table, wanting to reach out for it, but my body was pinned to the bed and my mind, drifting afloat. My heart slowed down and my head throbbed in unison with the ticking clock on my desk. And like the crescendo piece of an orchestral rendition, my head throbbed. I could see darkness pulling me towards it. It appeared quiet and peaceful. My breathing slowed without my consent, and again I was gasping for air, while being drowned in it. Like a flickering light bulb, my consciousness struggled to stay alight. In the final moments of my conscious mind, I hoped to wake up from this bad dream, just for another moment in life, to be alive and happy. The music had reached its grand finale as I drifted into the void.
And then there was silence, as my heart stopped, mind in a limbo and pupils wide open. Silence had consumed me, as I drifted into the eternal slumber!

IMMUNOTHERAPY-A GAME CHANGER IN CANCER CARE

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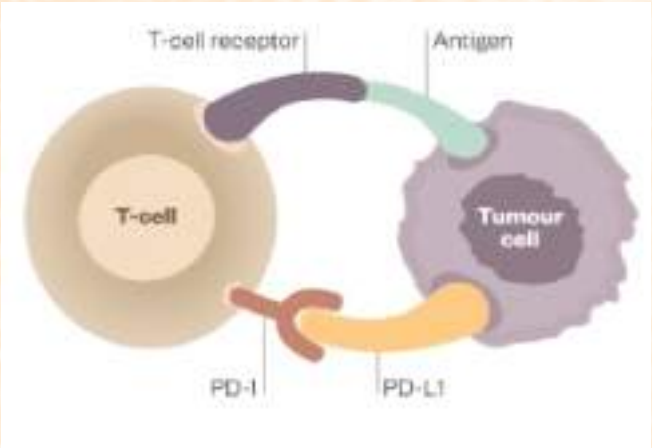
Immunotherapy: Immunotherapy represents a groundbreaking shift in the treatment of cancer, harnessing the body's own immune system to combat malignancies. Unlike traditional therapies such as chemotherapy and radiation that directly target cancer cells, immunotherapy works by enhancing the immune response, allowing the body to recognize and destroy cancer more effectively.
Here are some common types of immunotherapy:

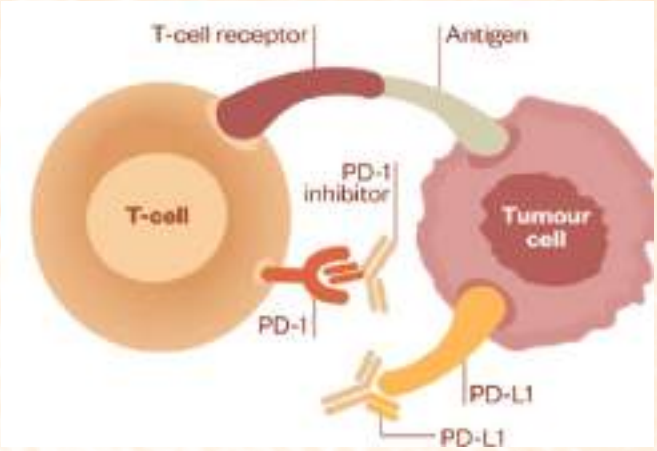
1 Checkpoint Inhibitors: These medicines take off the "brakes" on the immune system, letting it attack cancer more easily.

PD-L1 inhibitors are a class of drugs used in immunotherapy, specifically targeting the programmed death-ligand 1 (PD-L1) protein found on the surface of some cancer cells and immune cells.

Here's how they work:

- Immune checkpoint: The interaction between PD-L1 on cancer cells and PD-1 (programmed death protein 1) on immune cells (T cells) normally acts as an "off switch" for the immune system, preventing it from attacking healthy cells.
- Cancer's evasion strategy: Many cancer cells overexpress PD-L1, effectively "hiding" from the immune system by engaging the PD-1 "off switch" on T cells.
- PD-L1 inhibitors' action: PD-L1 inhibitors are monoclonal antibodies designed to bind to PD-L1 on the cancer cells, blocking the interaction with PD-1.
- Releasing the brakes: By preventing this interaction, PD-L1 inhibitors essentially remove the "off signal", allowing the T cells to become active and launch an immune response against the cancer cells





Anti-PD-1 Checkpoint Inhibitors		
Name	**Initial U.S. Approval**	**Manufacturer**
pembrolizumab (Keytruda)	2014	Merck & Co.
nivolumab (Opdivo)	2014	Bristol-Myers Squibb
cemiplimab (Libtayo)	2018	Regeneron
dostarlimab (Jemperli)	2021	GlaxoSmithKline (GSK)
retifanlimab (Zynyz)	2023	Incyte Corporation
toripalimab (Loqtorzi)	2023	Coherus BioSciences
tislelizumab (Tevimbra)	2024	BeiGene

For example, metastatic melanoma would have overall survival of 6-8 months with cytotoxic chemotherapy. With the combination of Nivoluma(PD-1 inhibitor) and ipilimumab(CTLA-4 inhibitor), overall survival is well beyond 5 years. This is unheard of in the pre-immunotherapy era.

2 Monoclonal Antibodies: Man-made antibodies that bind to cancer cells, helping the immune system spot and attack them.

3 Cancer Vaccines: Vaccines that teach the immune system to recognize and fight cancer.

4 Adoptive Cell Therapy: Taking immune cells from a patient, changing or increasing them outside the body, then putting them back to help fight cancer.

5 Cytokine Therapy: Using special proteins that tell the immune system to work harder against cancer.

The potential of immunotherapy is immense, with various types including checkpoint inhibitors, CAR T-cell therapy, and monoclonal antibodies showing promising results in clinical trials. Patients who previously faced limited options are now experiencing significant improvements in survival rates and quality of life.

Moreover, immunotherapy offers a personalized approach to treatment; it can be tailored based on individual tumor characteristics and patient health profiles. This adaptability not only maximizes efficacy but also minimizes side effects associated with conventional treatments. As research continues to evolve, we are witnessing remarkable advancements that could redefine how we approach cancer care.

The rise of immunotherapy marks a pivotal moment in oncology—one that offers hope for patients battling cancer and underscores the importance of continued investment in innovative treatments. Embracing this new frontier could lead us closer to conquering one of humanity's most formidable adversaries.

CAR T CELL IMMUNOTHERAPY: HOPE FOR REFRACTORY RHEUMATIC DISEASES

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CAR T-cell therapy, a cutting-edge immunotherapy, was initially developed to treat specific blood cancers. However, it is now undergoing clinical trials to explore its potential for treating rheumatic diseases. This procedure involves genetically modifying T cells from a patient to expressing a chimeric antigen receptor (CAR), allowing the T cells to recognize and attach to specific antigens (proteins) on target cells, such as B cells in autoimmune diseases. These CAR T-cells, once activated, can reset the immune system and may lead to remission of the disease. Although CAR T therapy is precise and offers durable outcomes with the possibility of extended remission, challenges remain, including the risk of cytokine release syndrome, immune toxicity, and treatment costs.

CAR T CELL THERAPY FOR CANCER VERSUS AUTOIMMUNE DISEASES

The CAR-T therapy represents a significant advancement in the treatment of autoimmune diseases. Currently, it is being evaluated as a long-term management option due to its effectiveness. This therapy can fundamentally change the immune system responsible for autoimmunity. Unlike cancer treatments, where CAR-T cells remain for an extended period, they are temporarily implanted in patients with autoimmune disease to reduce the likelihood of side effects, infections, and immune dysfunction.

Feature	CAR T-cell Therapy in Cancer	CAR T-cell Therapy in Autoimmune Diseases
Target Cells	Cancer cells (e.g., B cells in ALL, lymphomas)	Cells involved in the autoimmune response (e.g., B cells, plasma cells, autoreactive T cells)
Goal	Eradication of cancer cells	Restoration of immune tolerance and reduction of inflammation
Mechanism	Direct lysis of target cells	Varies, may involve B cell depletion, targeting autoreactive T cells, or modulating the immune response
Persistence	Desirable, potentially long-term remission	May be shorter-lived, potentially minimizing long-term immune dysfunction
Safety	Significant side effects, including cytokine release syndrome (CRS) and neurotoxicity	Generally safer, potentially fewer and less severe side effects
Current Status	Established in hematological malignancies, expanding to solid tumors	Emerging, with ongoing clinical trials and promising results

WHY DO WE NEED CAR T THERAPY

In rheumatology, CAR T-cell therapy is important because it offers a fresh treatment approach, especially for challenging cases. CAR T-cells target the immune cells that attack the body, causing inflammation and damage in autoimmune diseases. This could lead to long-term remission. While still under investigation, CAR T-cell therapy has the potential for a lasting reset of the immune system and better outcomes for those with severe rheumatic diseases. For example, CAR T-cells targeting CD19 (a protein found on B cells) in SLE have shown promising results with significant B cell depletion and a potential reset of the immune system.

1. Target Autoimmune Conditions:
Rheumatic diseases like systemic lupus erythematosus (SLE), systemic sclerosis (SSc), and antisynthetase syndrome (ASS) arise from issues within the immune system. In these conditions, immune cells attack healthy tissues. CAR T-cell therapy provides a method to specifically target and eliminate these harmful immune cells, potentially slowing the disease.

2 Refractory Cases:
Standard treatments like immunosuppressants and biologics often fail for many patients with rheumatic diseases. When traditional methods do not work, CAR T-cell therapy presents a new option. According to the National Institutes of Health (NIH), altering T cells to target specific antigens allows for a more focused and potentially more effective approach to the underlying cause of the disease.

3 Possibility of Long-Term Remission:
CAR T-cell treatment for rheumatic disorders aims to restore the immune system over time. This strategy may lead to prolonged disease remission rather than just temporary symptom relief. The treatment seeks to achieve a healthy balance in the immune system by removing autoreactive immune cells. This could significantly enhance patients' quality of life and lessen the need for ongoing treatment.

4 Ongoing Research and Development:
While CAR T-cell therapy is currently used for rheumatic disorders, researchers are working to enhance its effectiveness and safety. This includes exploring different target antigens, improving CAR T-cell design, and refining patient selection criteria. Clinical trials are in progress to assess the long-term impacts of CAR T-cell treatment across various rheumatic diseases.

ADVERSE EFFECTS

Despite its promise for treating rheumatic disorders, CAR T-cell therapy can have side effects. The frequency and severity of these effects can vary based on the specific rheumatic disease being treated and the CAR T-cell construct used.
Common Side Effects:

1 Cytokine Release Syndrome (CRS):
During this immune response, CAR T-cells produce a large amount of cytokines, leading to symptoms like fever, fatigue, and, in severe cases, organ damage.

2 Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS):
This condition results from immune cells harming the brain, resulting in neurological issues such as seizures, confusion, and symptoms resembling a stroke.

3 Long-Term Cytopenias:
CAR T-cell therapy may cause persistently low blood cell counts, particularly in platelets (thrombocytopenia) and neutrophils (neutropenia).

4 B Cell Aplasia:
Since CAR T-cells are designed to attack B cells, this can lead to a decrease in the body's B cell population, affecting antibody production.

5 Hypogammaglobulinemia:
Lowered blood antibody levels, or hypogammaglobulinemia, can increase the risk of infections.

6 Infections:
Patients may face greater vulnerability to infections because of possible B cell aplasia and immune suppression caused by the treatment.

• Management of side effects:
Monitoring patients and using medications like tocilizumab for CRS and corticosteroids for both CRS and ICANS are standard approaches. Some side effects may be temporary, while others, like B cell aplasia and hypogammaglobulinemia, may persist and require continual monitoring and management.

SPECIFIC RHEUMATIC DISEASES TARGETED BY CAR T-CELL THERAPY

Specifically, CAR T-cell therapy is being explored for systemic lupus erythematosus (SLE), systemic sclerosis, and antisynthetase syndrome. These diseases are marked by excessive B-cell activity and autoantibody production, which CAR T-cells can target.
SLE:
CAR T-cells can penetrate various tissues (such as skin, kidneys, and bone marrow) to deplete B-cells more effectively than some other treatments. Some studies indicate that CAR T-cell therapy can achieve long-term remission in SLE patients, possibly reducing or eliminating the need for other medications. This remission could lessen the dependence on long-term immunosuppressants like glucocorticoids, which can have serious side effects.
Systemic sclerosis:
By targeting B cells and reducing inflammation, CAR T-cell therapy may also help stop or even reverse the fibrotic processes characteristic of SSc. Research is ongoing to evaluate the feasibility and safety of CAR T-cell therapy in SSc patients, particularly those who cannot have hematopoietic stem cell transplantation (HSCT).
Antisynthetase syndrome(ASS):
ASS can be a serious, life-threatening disease, and some patients do not respond to standard treatments like corticosteroids and immunosuppressants, including B-cell-depleting antibodies. Several cases suggest that CAR T-cell therapy can lead to significant improvements in clinical symptoms, such as muscle strength, lung function, and skin lesions, along with reductions in autoantibody levels and the discontinuation of immunosuppressive medications. Some patients have achieved remission without medications.
Other Rheumatic Diseases:
Research is also looking into CAR T-cell therapy for rheumatoid arthritis and vasculitis, though these areas are not as developed.

ENGINEERING CAR T CELLS

CAR T-cell therapy involves genetically modifying a patient's own T cells to target specific antigens on the surface of autoreactive B cells, leading to their elimination and potentially long-term remission.
1 T Cell Collection:
T cells, a type of white blood cell vital for the immune system, are collected from the patient's blood through apheresis.
2 Genetic Modification:
In the lab, these T cells are genetically altered using a viral vector to express a chimeric antigen receptor (CAR).
3 CAR Structure:
A CAR is a synthetic receptor that combines an antigen-binding domain (often sourced from an antibody) with intracellular signaling domains from the T-cell receptor.
4 CAR Expression and Expansion:
The modified T cells, now expressing the CAR, are then multiplied in the lab to produce a large quantity of CAR T-cells.
5 Infusion and Targeting:
The engineered CAR T-cells are infused back into the patient, where they can recognize and bind to cancer cells expressing the target antigen.
6 Cell Killing:
Upon binding, the CAR T-cells activate a signaling pathway that leads to their activation, growth, and the destruction of targeted cells.
• Future directions:
Ongoing research aims to enhance CAR T-cell constructs, discover the most effective target antigens, and develop safer, more effective protocols for use in rheumatic diseases.

SELF MEDICATION – CURE OR CURSE?

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Junior Resident, Family Medicine

What is Self-Medication?

Self-medication is when a person treats their own illness or symptoms without consulting a healthcare professional.
While it may seem harmless for minor issues, self-medication can lead to serious health risks when done irresponsibly.
This includes:

- Taking old prescriptions for new problems
- Using drugs without guidance
- Following advice from friends, family, or the internet

» Why Self-Medication is Risky

- Wrong Diagnosis: You might be treating the symptom, not the cause
- Dangerous Drug Interactions: Combining meds without knowing the risks

Antibiotic Resistance: Misuse makes infections harder to treat
Dependency Risks: Painkillers and sedatives can be addictive
Delayed Medical Help: Wasting time on self-treatment can worsen outcomes

The Google Trap: Don't Believe Everything You Search
While it's tempting to search your symptoms online, it can lead to:

- Health anxiety
- Misinformation
- Misguided Self-Treatment: Choosing the wrong remedy for the wrong condition

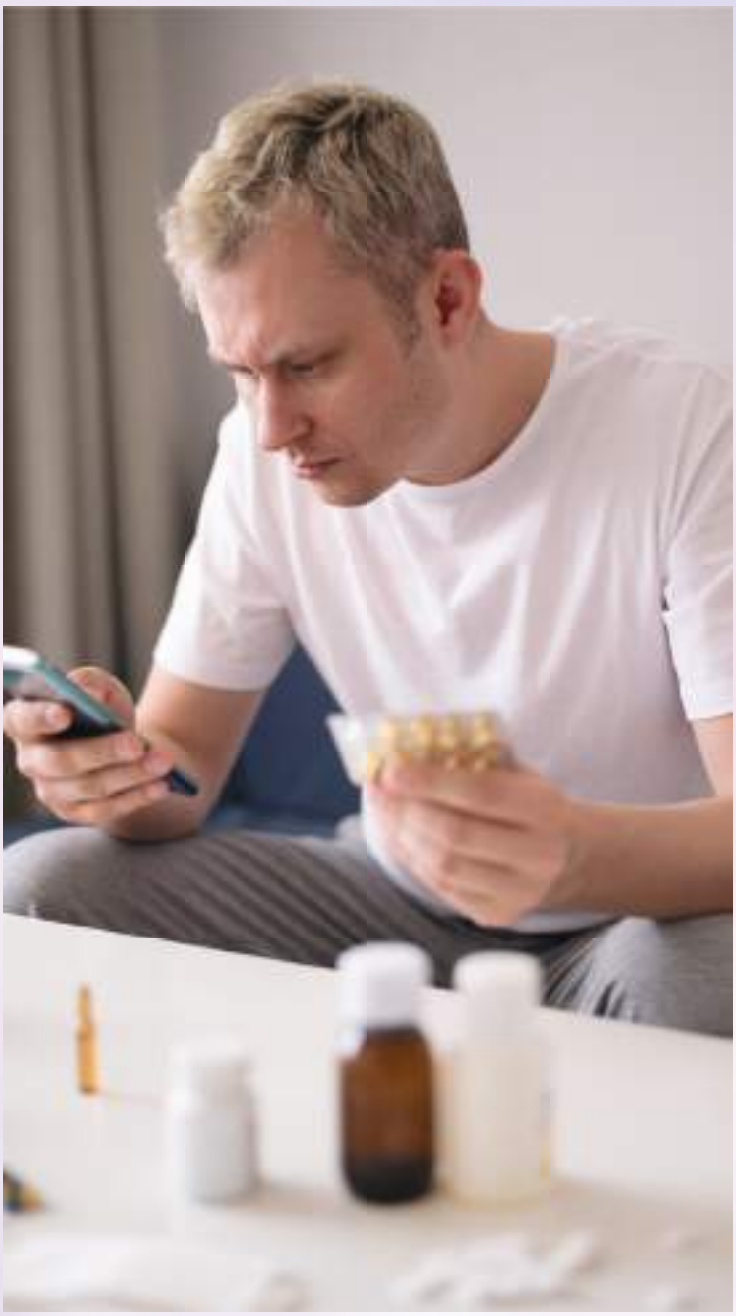
Real & Serious Side Effects
It can cause:

- Severe allergic reactions
- Confusion, dizziness, or seizures
- Heart complications
- Stomach bleeding
- Liver or kidney failure

» How to Prevent the Risks
Be smart. Be safe.

- Talk to a Healthcare Provider before taking any medicine
- Avoid Leftover Meds or expired drugs
- Never Share Medications with others

Self-care is good.
Self-medication without knowledge is dangerous.



EVENTS

Dr. Arun Thomas (Consultant Neonatologist) and Dr. Rony Joseph (Consultant Neonatologist and Paediatrician) participated as faculty at the National Neonatology Summit – Coineacon '25, organized by NNF Kerala and IAP Kozhikode, held at Kozhikode.

Dr. Cicija Kalleapparamban (Consultant Reproductive Medicine, KMC Hospital, Chengannur) participated in the cross talk presentation at Darsan 2025 (Annual CME of KOGS) organized by Government Medical College, Kottayam, in association with the OG Society, cross talk presentation at Darsan 2025.

The Department of Psychiatry and De-addiction at Dr. KM Cherian Institute of Medical Sciences, in collaboration with the NSS Karayogam, Paavathoor, organized the Mental Health Awareness Session at Government L. P. School, Paavathoor. The awareness class was led by Dr. Ruben John (Consultant Psychiatrist, KMC Hospital, Chengannur) and Shri. M.K. Sreekumar (Excise Preventive Officer (Rtd) & Vimukthi – State Government Trainer).

"An Overview on Surgical & Non-surgical Procedures in Cosmetic Gynaecology"- Scientific session by Dr. Kavitha L. S (Senior Consultant, Reproductive Medicine & Cosmetic Gynaecology, KMC Hospital, Chengannur) at IMA Chengannur.

Scientific session on "Extracorporeal Life Support – Current Status" by Dr. Geevarghese E. Mathew (Medical Superintendent & Consultant Cardiothoracic & Vascular Surgeon, KMC Hospital, Chengannur) and "Unraveling Liver Lesions: Case-Based Approach to Liver Space Occupying Lesions" by Dr. Murali Appukuttan (Consultant HPB, Gastro-Onco and Transplant Surgeon, KMC Hospital, Chengannur) was held at the IMA General Body Meeting, Adoor.

"Pre-operative Pulmonary Evaluation – Newer Tools" – Scientific session by Dr. Winnie Elizabeth Jose (Consultant Pulmonologist, KMC Hospital, Chengannur) at ATICON 2025 (Apollo Thoracic Intervention Conference) held in Chennai.

Scientific session on "Extracorporeal Life Support – Current Status" by Dr. Geevarghese K. Mathew (Medical Superintendent & Consultant Cardiothoracic & Vascular Surgeon, KMC Hospital, Chengannur) and "TIA and Minor Stroke – Current Concepts" by Dr. Aswin Mathew Thomas (Consultant Neurologist, KMC Hospital, Chengannur) was held at the IMA General Body Meeting, Kayamkulam.

Dr. Hima Ravindranath (Faculty Member, University of St. Augustine, USA) inaugurated the Lymphedema Clinic & conducted the Workshop on Lymphedema. The function was presided by Rev. Fr. Dr. Alexander Koodarathil (Managing Director, KMC Hospital).

Inauguration of ATPP (Accident Treatment Programme with the Public support) for 'Kerala Police – Kollam Rural' by Shri. Sabu Mathew K. M. IPS (District Police Chief – Kollam Rural) at Kollam Rural District Police Chief Office, Kottarakkara.
ATPP training session was conducted by Dr. R. Rajeev (Consultant Neurosurgeon), Dr. Arun Raj, S. I (Consultant Emergency Medicine) and Dr. Ruben John (Consultant Psychiatrist).

Dr. KM Cherian Institute of Medical Sciences, Chengannur, in collaboration with the Joint Martha Mariam Vanitha Samajam, Valayar, organized the Career Awareness Class at St. Mary's Orthodox Valiyapally, Valayar. The session was led by Dr. Sarah J. Easaw (Medical Director & Consultant Oncologist, Oncology Centre, KMC Hospital, Chengannur).

Dr. Kavitha L. S (Sr. Consultant, Reproductive Medicine and Cosmetic Gynaecologist) has been awarded the IASRM Excellence Award for being the Esteemed Faculty in the 10th IASRM World Congress – 'Longevity Revolution 2025' held at New Delhi.

The Department of Psychiatry and De-addiction at Dr. KM Cherian Institute of Medical Sciences organized the anti-drug awareness class on the International Day Against Drug Abuse at Chinmaya Vidyalaya, Chengannur.
The awareness sessions were led by Dr. Ruben John (Consultant Psychiatrist, KMC Hospital, Chengannur), Fr. Bibin Baby (Psychiatric Counsellor, KMC Hospital, Chengannur) and Shri. Ashish Samuel (Psychiatric Counsellor, KMC Hospital, Chengannur). Smt. Preethi R. (Principal, Chinmaya Vidyalaya) and Shri. M. V. Prathipal (Vice President, Chinmaya Vidyalaya) were present at the event.

EVENTS

Shri George Kurian, Hon'ble Minister of State for Minority Affairs & Fisheries, Govt. of India, inaugurated the Advanced Cardiac Laser Centre at Dr. KM Cherian Institute of Medical Sciences. He also presented the NABH certificate awarded to the hospital by the Quality Council of India for maintaining high standards. The function was presided by Rev. Fr. Dr. Alexander Koodarathil (MD, KMC Hospital, Chengannur) and Senior Cardiologists Dr. Madhu Paulose, Dr. Anand Srinivasan, Dr. Devarajan K.A., Dr. R. Senthil Kumar, Thiruvanvandoor Grama Panchayat President Shri. P. V. Sajan, Shri. Joji Cherian, Panchayath members Shri. Sajeev Valliyil, Shri. Saju Edakkalil etc. attended the function.

Dr. KM Cherian Institute of Medical Sciences organized the workshop on Diabetic Foot Ulcer by Dr. Rinky Mansukhani (Senior Clinical Manager, Coloplast Academy).

As part of the Kerala Government's 'Arogyam Anandam' cancer awareness screening campaign, Dr. KM. Cherian Institute of Medical Sciences, Chengannur, in collaboration with Martha Mariam Vanitha Samajam (Women's Wing of Orthodox Church of India), organized the cancer awareness class at St. Thomas Orthodox Church, Chanaganacherry. The session was led by Dr. Sarah J. Easow (Medical Director & Consultant Oncologist, Oncology Centre, KMC Hospital, Chengannur).

Awareness session by Dr. Arunkumar. A (Consultant Gastrosurgeon), at Liver Foundation of Kerala, Alappuzha District, held at Mavelikara.

Blessing ceremony of 'Laser Hair Removal Machine' at Dr. KM Cherian Institute of Medical Sciences, officiated by the Managing Director, Rev. Fr. Dr. Alexander Koodarathil.

On World Plastic Surgery Week, Department of Plastic and Reconstructive Surgery at Dr. KM Cherian Institute of Medical Sciences, Chengannur, organized the Quiz Competition. The event commenced with an introductory speech by Dr. Brian Dominen Thomas (Consultant Plastic & Reconstructive Surgeon, KMC Hospital, Chengannur) followed by the quiz competition conducted by Dr. Sanna Salim (Consultant Plastic, Reconstructive & Aesthetic Surgeon, KMC Hospital, Chengannur).

EVENTS

"Treating Diabetes – Case Based Approach" – Scientific session by Dr. Amal Dev. D (Consultant Endocrinologist, KMC Hospital, Chengannur) at IMA Chengannur.

Department of Fire & Safety at Dr. KM Cherian Institute of Medical Sciences, in association with the Fire & Rescue Station, Chengannur and District Disaster Management Authority, Alappuzha, organized the workshop on 'Skills to Effectively Manage Fire and Disasters'.

Department of Minimally Invasive and Laparoscopic Surgery at Dr. KM Cherian Institute of Medical Sciences, Chengannur, organized the 'Laparoscopic Hernia Live Surgery Workshop'. The workshop was led by Dr. Farish Shamsudeen (Consultant Minimally Invasive & Laparoscopic Surgeon, KMC Hospital Chengannur) and his dedicated team.

Scientific session on "Liver Lesions Uncovered – A Case Based Approach" by Dr. Murali Appukuttan (Consultant HPB, Gastro-Onco and Transplant Surgeon, KMC hospital, Chengannur) and "Neurosurgical Red Flags – What Not to Miss in Daily Practice" by Dr. Rajeev. R (Consultant Neurosurgeon, KMC hospital, Chengannur) at IMA, Mavelikkara.

Department of Neonatology at Dr. KM Cherian Institute of Medical Sciences organized the Poster Competition as part of 'World Breastfeeding Week (1st – 7th August 2025)'. The prizes were distributed by Dr. Arun Thomas (Consultant Neonatologist), Dr. Aparna B. Raj (Jr. Consultant Neonatologist) and Dr. Rebecca John (COO).

Dr. KM Cherian Institute of Medical Sciences organized the Seminar on – 'Update on Palliative and End of Life Care' by Dr. Sunitha Daniel (Lead Consultant in Palliative Medicine, York and Scarborough Teaching NHS Hospital Foundation Trust, York, UK).

EVENTS

"Microvascular management of diabetic foot – A plastic surgeons view on diabetic ulcer management"- Scientific session by Dr. Brian Gammon Thomas (Consultant Plastic & Reconstructive Surgeon, KMC hospital, Chengannur) at IMA, Kottarakkara.

Blessing ceremony of OPG (Orthopantomogram) with Ceph (Cephalometric) Machine at Dr. KM Cherian Institute of Medical Sciences, officiated by the Managing Director, Rev. Fr. Dr. Alexander Koodarathil.
The function was graced with the presence of Consultant Radiologists, Dr. Naveen J. Tom, Dr. Gopika N, Dr. Akhil Thomas, Dr. Alex Paul, Dr. Geevarghese K. Mathew (Medical Superintendent, KMC Hospital) Dr. Pooja Raghunath Consultant Microbiologist & Dr. Rebecca John (COO, KMC Hospital).

Rev. Fr. Dr. Alexander Koodarathil (Managing Director, KMC Hospital, Chengannur) signed MoU with Mr. Stanley Chiminkira (Government Representative of Zimbabwe and Chief of Sake) at Dr. KM. Cherian Institute of Medical Sciences, for the establishment of healthcare centers in collaboration with the Government of Zimbabwe in it's capital city, Harare. Dr. Merit Sigauke also took part in the discussions.

As part of PINK PROMISE – One-year Breast Cancer Awareness Campaign, Dr. KM Cherian Institute of Medical Sciences in collaboration with MRI Residents association, organized the cancer awareness class at Evershine Residential School, Pathanamthitta. The session was led by Dr. Sarah J. Easow (Medical Director & Consultant Oncologist, Oncology Centre, KMC Hospital).

Department of Multi-organ Transplant at Dr. KM Cherian Institute of Medical Sciences, in collaboration with MRA Association, Pathanamthitta, organised the Round Chair Community Influencers Meet-up – 'Meet the Media' at Evershine Residential School, Pathanamthitta. The sessions included 'Early Detection and Prevention of Kidney Disease' by Dr. Appu Jose (Consultant Nephrologist, KMC Hospital)

Inauguration of the B.Sc. courses affiliated with Mumbai Tata Institute of Social Sciences (TISS) at Dr. KM Cherian Institute of Medical Sciences, Chengannur. The event was inaugurated by Rev. Fr. Dr. Alexander Koodarathil (Managing Director, KMC Hospital, Chengannur) The event also featured addresses by Dr. Geevarghese K. Mathew (Medical Superintendent, KMC Hospital) and Dr. Rebecca John (Chief Operating Officer).

Hearty Welcome

Dr. Libin Mathew
MBBS, MD, DM
Consultant Pulmonologist

Dr. Sannia Salim
MBBS, DNB (Plastic Surgery), Fellowship in Oncoreconstruction (TATA Medical Centre, Kolkata), IAAPS Fellowship in Cosmetic Surgery
Consultant
Plastic Reconstructive & Aesthetic Surgeon

Dr. Meriya Susan Joseph
MBBS, MD, Fellowship in Pediatric Critical Care
Pediatric Intensivist

Dr. Raman Rajendran
MBBS, DNB, DGO
Jr. Consultant
Surgical Gastroenterology

Dr. Arun George Varkey
MBBS, MS
Jr. Consultant Orthopaedic Surgeon

Dr. Thankuraj B. R.
MBBS, DNB, FCCCM
Intensivist

Dr. Midhila Sebastian
MBBS, MD
Consultant Radiologist

Dr. Laxmikanth Jella
MBBS, DNB (Radiology), DM (Neuro Interventional & Intervention Radiology)
Consultant Neurovascular & Interventional Radiologist

Dr. Cherian Jerin Oommen
MBBS, DNB - Pediatric Surgery
Consultant Pediatric Surgeon

Dr. Divya Mary Elias
MBBS, MD
Consultant Pulmonologist

Dr. Deepak James
MBBS, MD, DM
Consultant Gastroenterologist

Dr. Ambily Narayanan
MBBS, MD
Jr. Consultant Anesthesia

Dr. Karishma Abraham George
MBBS, MD (DVL), AAAM
Consultant Dermatologist

Dr. Deepak. A
MBBS, DNB, IDCCM
Intensivist

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