

Analysis of Pandemic COVID-19 Impact in India

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Abstract: COVID-19 [Coronavirus disease 2019] an infectious disease started as an emerging pathogen for humans and resulted in pandemic all around the world. From the name of this prevailing disease describing 2019, pneumonia of an unknown cause which has been caused in the city of Wuhan, China was reported to WHO. Howbeit, the common public are unaware of this pernicious virus causing colossal downfall of people in various countries like US, China, Italy, Iran etc.,. Facing troubles and format, was actually not the first time escalation. Coronaviruses pose serious health threats to humans & animals, from 2002 to 2003 severe acute respiratory syndrome coronavirus (SARS-COV) infected nearly 8,000 people with the casualty rate of 107. Since 2012, middle east respiratory syndrome coronavirus (MERS-COV) infected 2,000 people causing death rate of nearly 36%. Since 2013 porcine epidemic diarrhea coronavirus (PEDV) swept throughout the U.S caused 100% death rate in the population of pig. The analysis of this study shores us that the family of coronavirus existence has been there since 20 years.

Key words: Antiviral medicinal plant, medicinal activity & chemical constituents

Introduction:

Viruses are a kind of biological puzzle to biologists since they are the threshold of living & nonliving showing the characteristics of both. Coronavirus belong to the family Coronaviridae in the order.

Niclovirales.

The four genera of this virus are

- Alphacoronavirus
- Beta coronavirus
- Gamma coronavirus
- Delta coronavirus



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SARS:

Severe acute respiratory syndrome a respiratory illness reported in South east, Asia, North America & Europe in 2002-2003. The creation of panic among people all over the world and has resulted in great economic loss of many countries like China, Singapore etc. It begins with high fever, including headache, discomfort and body aches. Patients were also developed with dry cough and have trouble in breathing. The spread of these diseases was a chain (i.e.) a person to person contact especially with infectious materials like the respiratory secretions. The viruses that caused SARS tends to change its structure and form constantly which made it very difficult to develop a vaccine to treat the diseased[1].

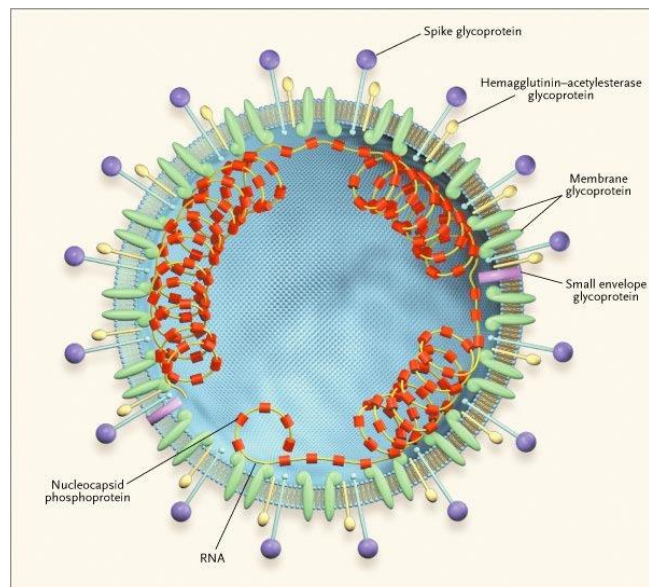


Fig.1.SARS-Associated Coronavirus

MERS:

Middle East respiratory syndrome, this is also a severe respiratory illness with symptoms of fever, cough & shortness of breath caused by the viruses "Coronavirus ". This was reported at Saudi Arabia in the year 2012 affecting rat, human and camel.

Structure:

The Coronaviruses – that cause SARS, MERS are the enveloped viruses their genome is single stranded RNA. The nucleocapsid is helical. These viruses have petal shaped surface projections arranged in fringes. There is no specific vaccine (or) treatment to cure the diseases caused by 'Corona'. Using Extra Corporeal Membrane Oxygenation (ECMO) seems to improve the outcomes significantly neither the combination of antiviral and interferon nor the corticosteroids improved the outcomes[2].

Taking suspicious precautions like washing hands with sanitizer, covering the nose & mouth avoiding personal contact and alone & disinfectant frequency etc., were the only steps to reduce the risk of getting rid of infection that time. Fig.1 represents the replication of corona virus in reference with Wikipedia

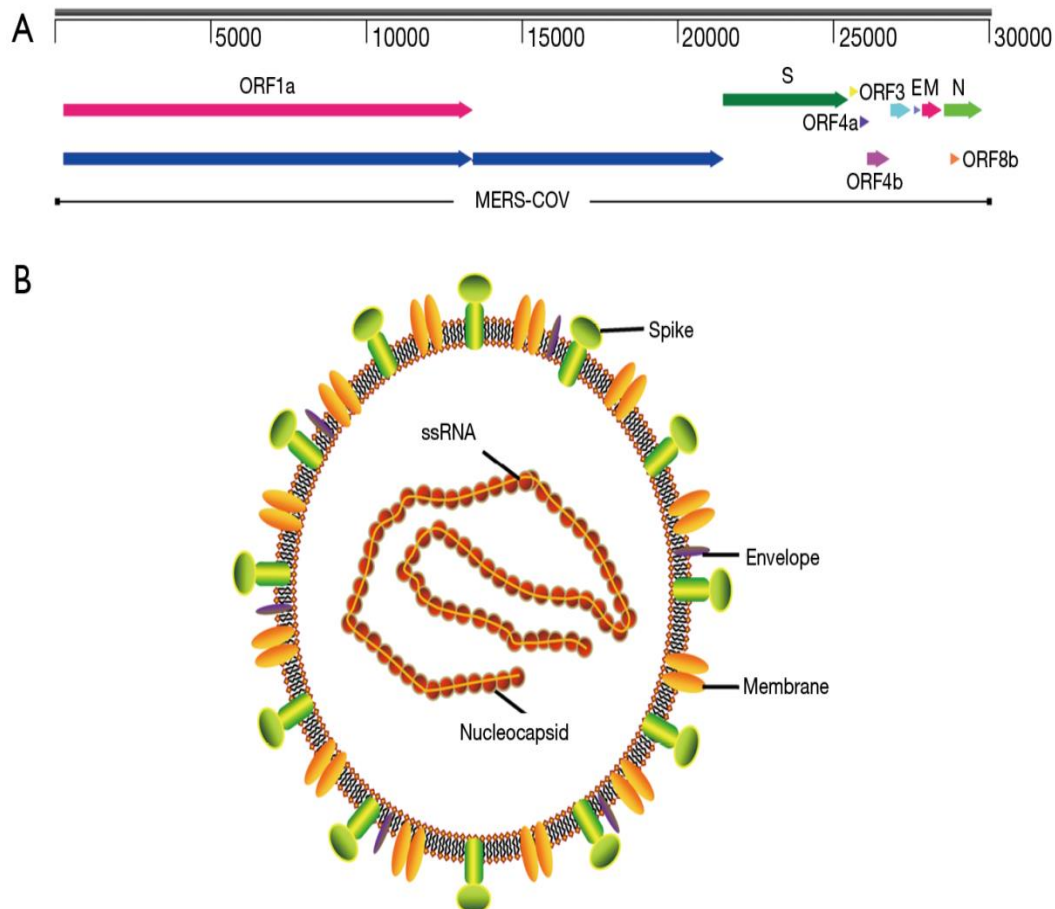


Fig.2. Current understanding of Middle East respiratory syndrome coronavirus infection in human and animal models

COVID -19:

Corona virus disease (COVID -19) a newly discovered coronavirus novel in the year 2019 is very much similar to the above discussed diseases SARS & MERS caused by the same family (corona virus). The structure, symptoms, way of spread, its virulence shows that the emerging covid -19 is dualistic[3].

The word CORONA means "crown" in Latin. Coronavirus are zoonotic, which means that the virus is transmission between animals and humans.

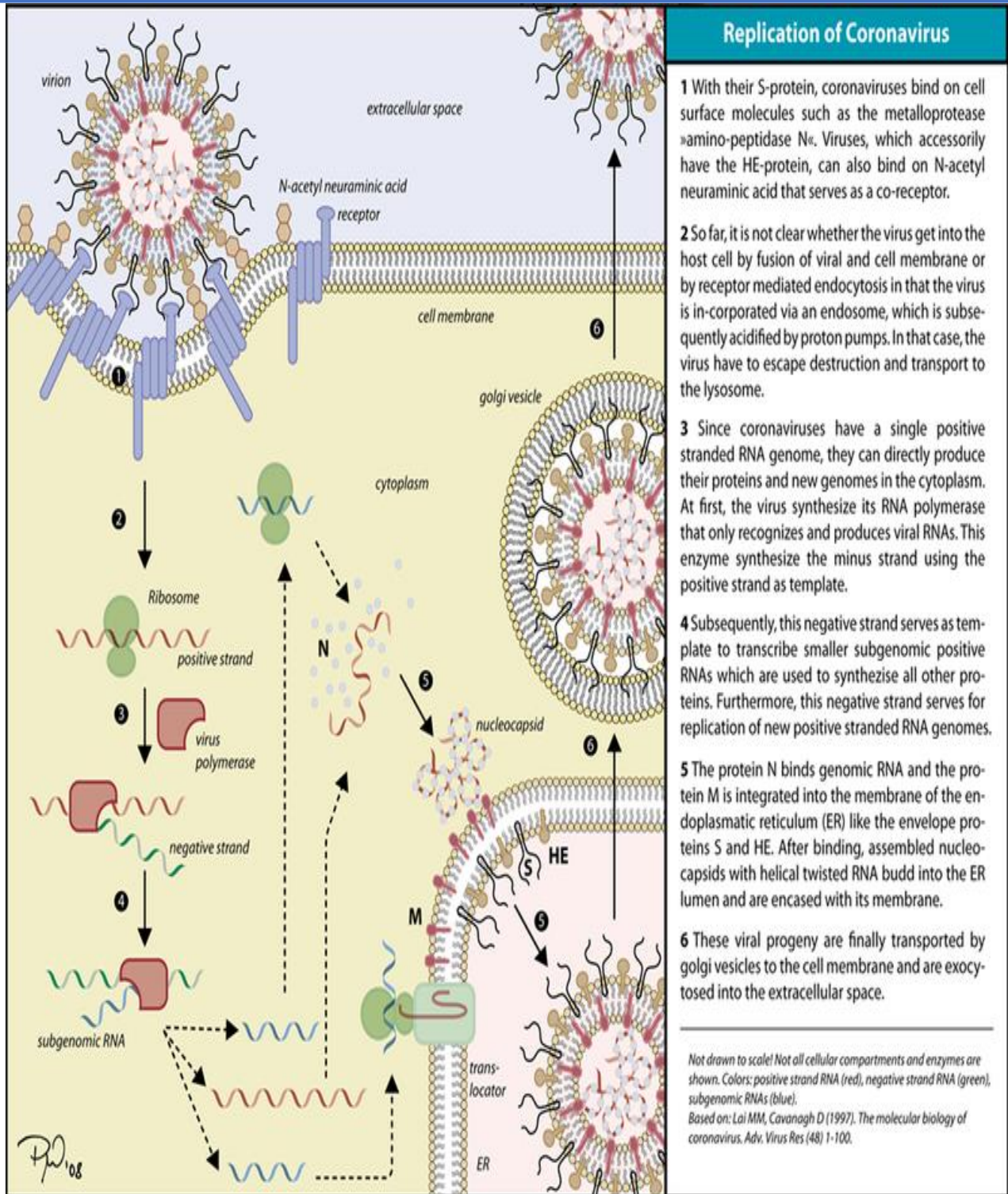
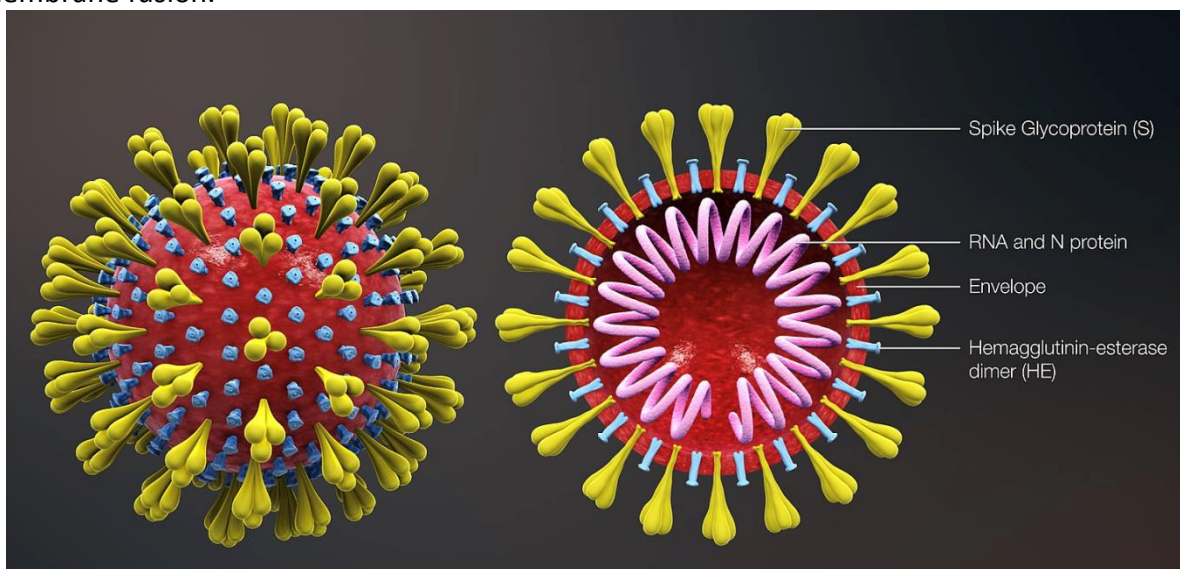


Fig.3.Replication of corona virus

Structure:

In Fig.4 [4]., the virus consists of core of genetic material surrounded by an envelope with protein spikes. The protein spike is a multifunction molecular machine that mediates coronavirus entry into host cell. It first binds to an end organ of the host cell surface through its s1 subunit and then coalesce viral and host membrane through its S2 subunit .The spike protein will occur in two different structurally specific anatomy, perfusion & post fusion. The transition from perfusion to post fusion anatomy of the protein spike must be triggered leading to the membrane fusion.



Source: ASM

Fig.4.Novel Corona Virus

Symptoms:

The recognition of these symptoms will take 2-4 days to appear. The average incubation period appears to be nearly 5-6 days. The symptoms of corona Virus can be so mild and then make headway Constantly. The person infected with covid -19 can experience a wide range of symptoms including dry cough and shortness of breath as seen in SARS and MERS .Most common symptoms of covid-19 includes fever with temperature of about 104°F or higher, Dry cough without the production of the mucus secretion, Fatigue a state of overall lack of energy and tiredness.

Then certain less trivial symptoms includes aches and pains, sore throat, vomiting, diarrhoea conjunctivitis, headache, loss of taste or smell, discoloration of fingers and toes.

If the serious symptoms like

- Chest pain or pressure
- Difficulty in breathing
- Loss of speech or movement

Should seek immediate medical attention. Rather than these, if supposed to experience

Peculiar symptoms like

- Trouble breathing
- Mild constant pain
- Confusion
- Inability to wake up
- Blue turned lips or face

Should also be considered

Corona Spread (As per May 9-2020):

Across World:

Conformed Cases: 3826676

Deceased: 265961

Table.1.WHO Regions and Conformed Cases

WHO Regions	Conformed cases
Europe	1,682,338
America	1,636,841
Eastern Mediterranean	251,741
Western Pacific	158,523
South East Asia	91,977
Africa	40,544

Across India:

Conformed Cases: 59662

Recovered: 17847

Deceased: 1981

Across Tamil Nadu:

Conformed Cases: 6009

Recovered: 1605

Deceased: 40

As per the graphical representation Fig.3,the daily new cases in TamilNadu touches near 4000 still 8th May. The hike in the number of cases between 24th April to 1st day of May was so consistent with a fair sum of cases at about 1000.Then from 2nd May, it started increasing at a nimble rate reaching out 4000.

Daily Active cases in India

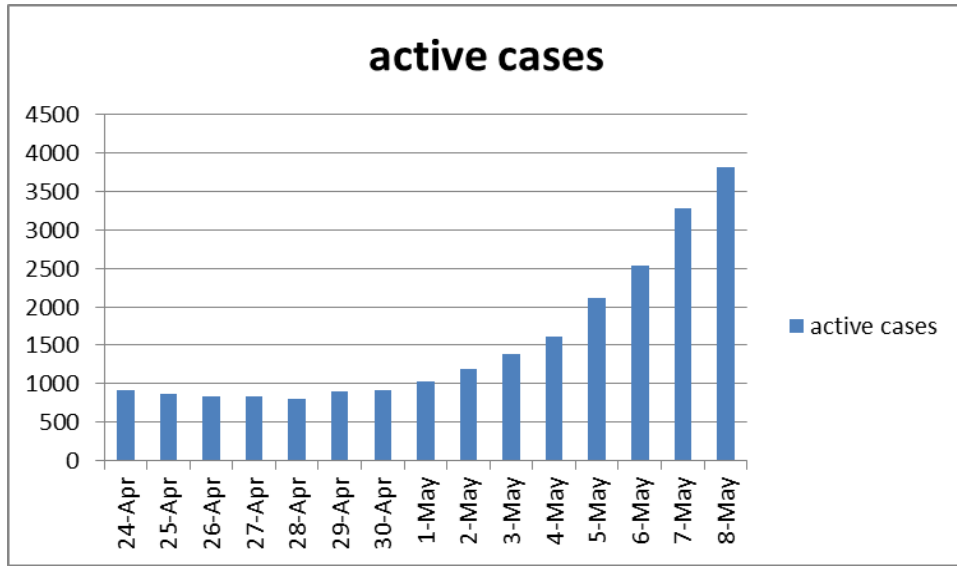


Fig.5.COVID19 Active Cases 2020

Case Completion

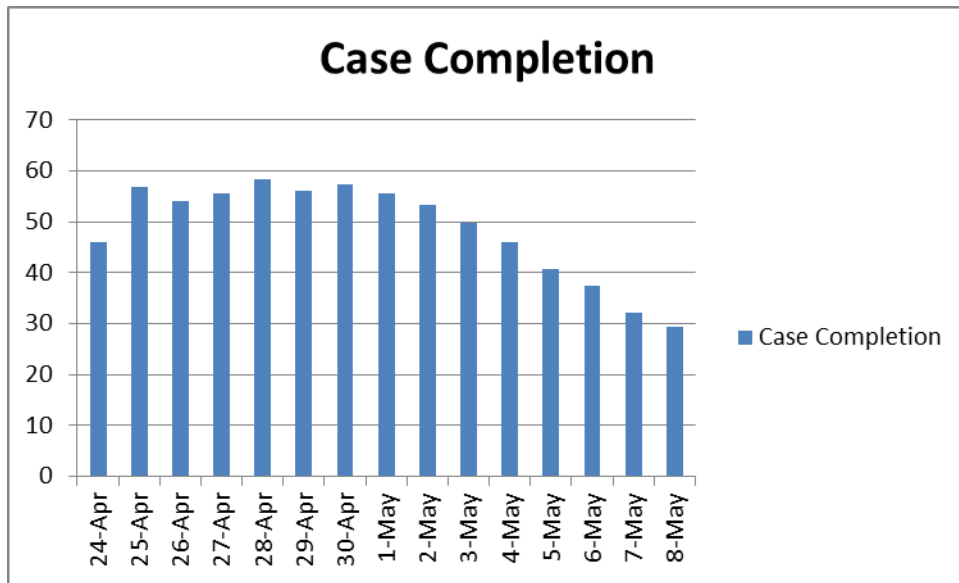


Fig.6.COVID19 Case Completion 2020

As per the graphical representation Fig.4The case completion i.e. The number of completely cured. There is no much difference in the no.of.completed cases, since 24th april.Among the active cases number 1/4th of the total comes under the completion of the cases.

Daily New Cases

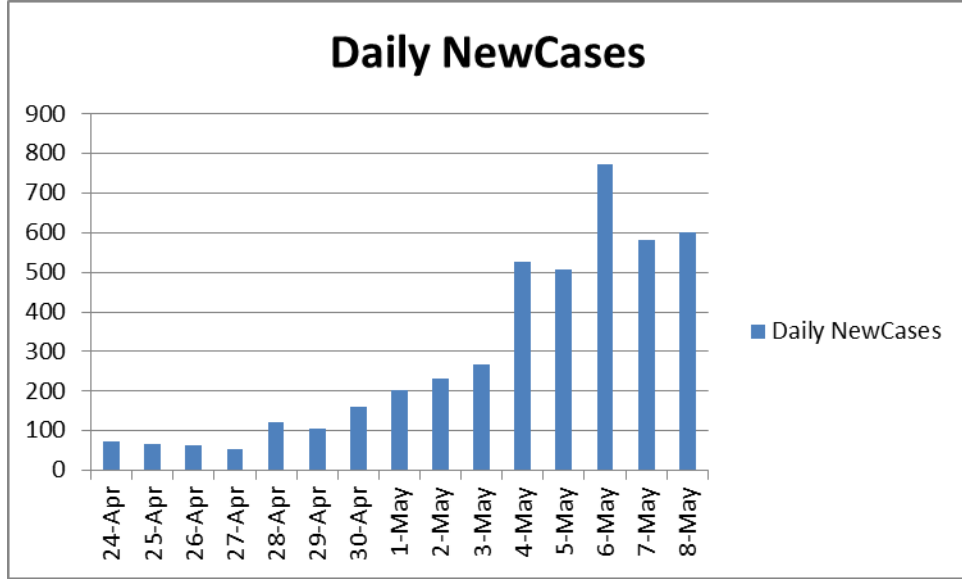


Fig.7 .COVID19 Daily New Cases 2020

As per the Graphical Representation Fig.5 the study of the New Cases in TN was Resilient till 30th of April. Once ingresses into May, drastically the cases turned out to be bounteous, reaching up 800[5].

Daily Discharge

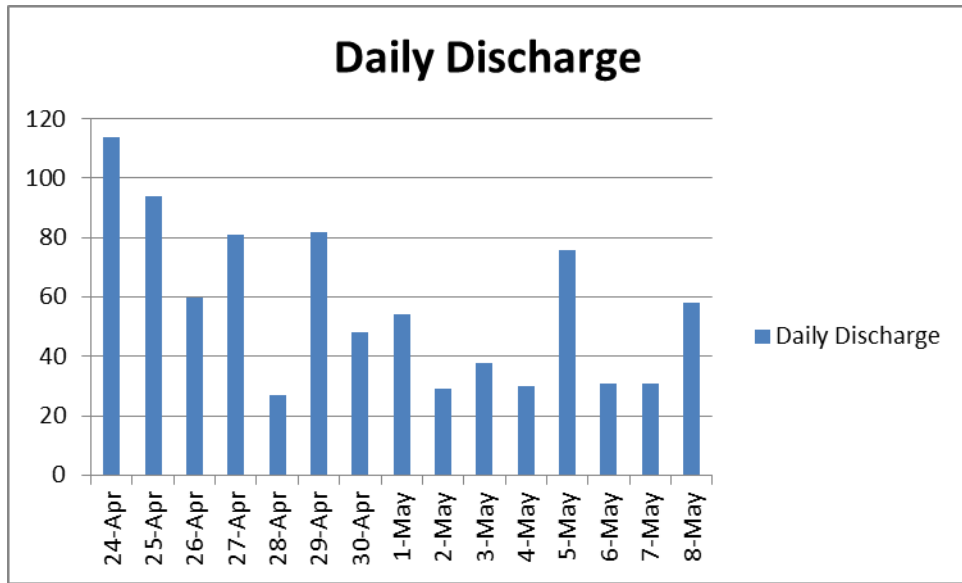


Fig 8. COVID19 Daily Discharge 2020

As per the Graphical Representation Fig.5.The discharge rate keep on decreasing. As the containment period is 14 days the symptom less people is discharged and remaining are treated under special care by the Tamil Nadu Government.

Daily New Death

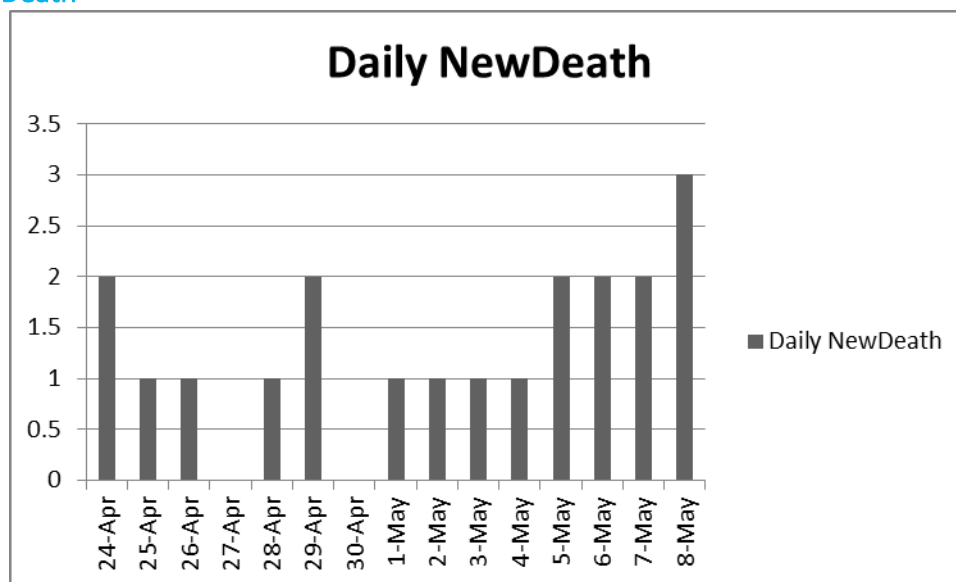


Fig.9. COVID19 Daily New Death 2020

As per the Graphical Representation Fig.7,The fatality rate due to covid-19,at TamilNadu has been waggling between 24th April to 1st may .The cases between 1st to 4th May remain firm,i.e.for a continuation of maximum of 3 days there was no new death cases depicted. But on 5th May the cases increases and continues till 7thMay.But the statistics on 8th May on death rate at TamilNadu was lamentable, showing the accural like never before[6].

Table.2.District Wise Abstract of COVID19 Positive cases (AS per May-9)

Districts	Diagnosed cases	Deaths	Recovered cases	Active Cases	Population	Cases per M	Last case Reported on
Ariyalur	275	0	6	269	752,481	365.5	10 May 2020
Chengalpattu	267	4	56	207	2,556,423	104.4	10 May 2020
Chennai	3,839	28	639	3,172	7,088,000	541.6	10 May 2020
Coimbatore	146	1	140	5	3,172,578	46	3 May 2020
Cuddalore	395	0	27	368	2,600,880	151.9	10May 2020

Dharmapuri	4	0	1	3	1,502,900	2.7	8 May 2020
Dindigul	108	1	79	28	2,161,367	50	9 May 2020
Erode	70	1	69	0	2,259,608	31	15 Apr 2020
Kallakurichi	59	0	5	54	548,950	107.5	9 May 2020
Kancheepuram	122	1	20	101	1,863,174	65.6	10 May 2020
Kanyakumari	24	0	16	8	1,441,829	16.6	9 May 2020
Karur	48	0	42	6	1,076,588	44.6	10 May 2020
Krishnagiri	20	0	0	20	1,883,731	10.6	10 May 2020
Madurai	117	2	73	42	2,441,038	47.9	10 May 2020
Nagapattinam	45	0	44	1	1,614,069	27.9	1 May 2020
Namakkal	77	0	56	21	1,721,179	44.7	9 May 2020
Nilgiris	14	0	11	3	735,071	19	9 May 2020
Perambalur	104	0	5	99	564,511	184.2	10 May 2020
Pudukottai	6	0	1	5	1,618,725	3.7	10 May 2020
Ramanathapuram	26	1	15	10	1,337,560	19.4	10 May 2020
Ranipet	66	0	39	27	1,210,277	54.5	10 May 2020
Salem	35	0	29	6	3,480,008	10.1	6 May 2020
Sivagangai	12	0	12	0	1341,250	8.9	20 Apr 2020
Tenkasi	52	0	21	31	1,407,627	36.9	8 May 2020
Thanjavur	66	0	47	16	2,302,781	28.7	9 May 2020
Thiruvannamalai	82	0	13	69	2,471,222	33.2	9 May 2020

Theni	59	1	42	16	1,143,684	51.6	10 may 2020
Thirunelveli	90	1	62	27	1,738,376	51.8	10 May 2020
Thirpathur	28	0	18	10	2,713,858	10.3	10 may2020
Thiruppur	114	0	112	2	1,670,608	68.2	2 May 2020
Thiruvallur	337	2	63	272	1,111,812	303.1	10 May2020
Thiruvarur	32	0	29	3	3,725,697	8.6	6 May 2020
Trichi	65	0	51	14	2,464,875	26.4	9 May2020
Tuticorin	30	1	26	3	1,268,094	23.7	7 May 2020
Vellor	32	1	17	14	1,614,242	19.8	10 May 2020
Villapuram	299	2	42	255	295,687	1,011.2	10 May 2020
Virudhunagar	39	0	31	8	1,943,309	20.1	10 May 2020

The Table.2 represents that the TamilNadu government as of the May 2 has notified a list of 711 geographical locations across 36 districts at "COVID-19 containment zones" to the spread of the pandemic in the state. Five or more than five positive COVID cases in a locality will be considered as clusters. As on 1st and 2nd May, the total number of coronavirus positive cases in TamilNadu has crossed then 2300 marked with 27 deaths were reported from across the state. With this no of cases getting increased, the state got has pulled up the district level administration and demarcated cluster containment zones.

To cure the further spread of the disease. According to UHM (Union Health Ministry) 12 districts in TamilNadu have been identified as red zonedistricts, 24 districts have been in the condition of orange zone .Whereas only one single district is under green zone .The following districts has been tabulated below[7].

RED Zone Districts are the areas where there are cases are reported regularly in the cluster. The spread of the Corona Virus is too much faster and the rate of the death and the active cases is more in number. The districts like Chennai, Ariyalur, Madurai, and Chengalpattu are under Red zone prone area as in Fig.3.the data in Table.2 proves the reason red Red zone Prone areas, Since the diagnosed cases are more than 100 in number, Mortality cases have also registered .Moreover last cases reputation is seen every day without a reduction.

Table.3.District wise Zones (AS per Lockdown 3.0):

Districts	Zone
Chennai	RED ZONE
Madurai	
Namakkal	
Thanjavur(Thanjore)	
Chengalpattu	
Thiruvallur(Tiruvallur)	
Thiruppur	
Ranipet	
Virudhunagar	
Thiruvarur(Thiruvarur)	
Vellore	
Kanchipuram	
Theni	
Tenkasi	
Nagapattinam	
Dindigal	
Villupuram	
Coimbatore	
Cuddalore	
Salem	
Karur	
Thoothukudi	
Thiruchirappalli	
Thirupathur	
Kanyakumari	
Thiruvannamalai	
Ramanathapuram	
Thirunelveli	
The Nilgiris	
Sivagangai	
Perambalur	
Kallakurichi	
Ariyalur	
Erode	
Pudukottai	
Dharmapuri	
Krishnagiri	GREEN ZONE

Orange Zone called buffer zone districts are the area affected with COVID19 cases that are reported in the parts, but not have been identified in the past 14days .The districts like Theni,Thenkasi,Nagapattinam,Dindigul,Tuticorin etc.,are the orange zone buckets .Since the diagnosed cases are moreover less than 100,with not more than one death cases. The last case reported has a gap in the past three days without any new cases.

Green zone Districts are the area where no Covid19 infection cases has been reported in the past 28 days. In such a requisite, only one single districts.i.e Krishnagiri is coming under green zone prone, with only one diagnosed cases and no death

Chances of updates as per current crisis.

More distinct that were seeing as hiatus(calmness) in Covid19 cases have started reporting a Sharpe spike in the number of infection.Nilgiris,which had no cases for more than 20 days had four fresh cases on 5th May.Namakkal in the western zone did not seem to have any positive cases so far, but reported 15 fresh cases on the same day of May 5.Krishnagiri,the lone District in the whole of TamilNadu under green zone reported two more cases on 6th May (Wednesday) .If the doubling time is less than four days ,then this lone district krishnagiri would be pushed into Red Zone.

A few more districts are likely to change the color zone as they started reporting fresh cases. The districts like Ariyalur, Cuddalore, Thiruvannamalai, Villupuram and Thenkasi would effective by the already existing 12 Districts under red zone.

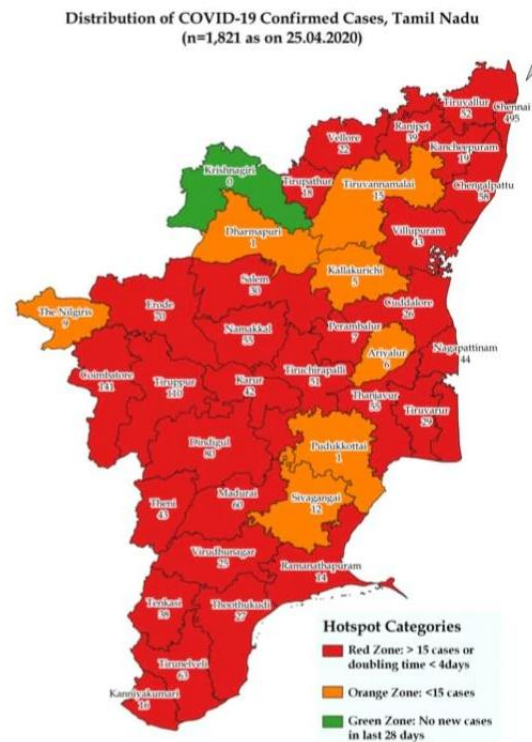


Fig.10.Zones in Tamil Nadu

Conclusion:

The mission of developing the vaccine to treat novel covid – 19 is not yet accomplished. But still the measures are under work, as we have seen so far that SARS, MCRS caused by Coronavirus and cannot be medicated in contempt of taking suitable steps of reducing it. Government of Tamilnadu has also taken intensified measures to 3 item the spread like thermal & clinical screening of passengers to from other Countries, Disembarking the people from aircrafts followed by home Quarantine for 28 days. Isolating people with covid symptoms in hospital, surface hygiene, creating awareness to have defense to increase the immunity like “Kabasura kudineer” (siddha medicine) etc. Even so, people are endeavoring in the guest of rigorous vaccine it is ending up in rain, A 47- years old man worked at a drug manufacturing company died testing by the cough syrup formula invented by him to cure covid-19 infection. “The only way to keep ourselves away from the spiked catastrophic pathogen (Coronavirus) “is by Staying home! Staying safe!

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