# MEDITIME

*A Medical Bulletin from* TIME Pharmaceuticals (P.) Ltd.

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## We Will Win It


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## Inside




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# Editorial

This ongoing pandemic has affected us all in every possible ways and in every possible sector. COVID-19 has been detected in all provinces and district of the country with Bagmati Province and Kathmandu being the highly hit province and district respectively. According to World Bank (South Asia Economic Focus) the country's economy is projected to grow by only 0.6% in 2021 as lockdown caused by COVID-19, disrupted economic activity, especially tourism and manufacturing.

Over these past 8 months we have worked restlessly to ensure smooth supply of our products in spite of disruption of supply chain of raw materials and packaging materials in international market. We scaled up production, increased shifts and kept a check on proper supply of the medicines to the customers. While focusing on increased production capacity and meeting the demand with supply, our number one priority has always been to keep our employees safe and protected. During this time, we implemented every possible safety and disinfecting protocols. From being amongst the 1st company in issuing COVID-19 insurance policy to all our staffs and shareholders to practicing safety protocols like: wearing a mask, sanitizing hands, social distancing, daily temperature checks to protect our employees has always been our major concern.

The environment we are in now is beyond any of our wildest imagination. Nevertheless, economic activities are opening up, but the problem still remains the same. There is still the fog of uncertainty, thinking about how the next normal will look like once the crisis will pass. On behalf of every Timeans, we are thankful to all the frontline warriors and healthcare providers for their selfless effort in the treatment, control and management of COVID-19.

We are now moving forward steadily in the face of uncertainty and are adjusting to this changed scenario by effectively managing our Sales team, Production & Logistics. As we are moving forward to next normal we bring to you our continuous health bulletin 33rd issue of MEDITIME. This issue is dedicated entirely to COVID-19 with latest information and valuable articles. I hope to receive your overwhelming love and support for our health bulletin.

Lastly, Stay safe and practice SMS

Sudarshan Lal Shrestha
Editor in Chief

e-bulletin can also be viewed in www.timepharma.com

# Health News Line

## New coronavirus variant: What do we know?

The rapid spread of a new variant of coronavirus has been blamed for the introduction of strict tier four mixing rules for millions of people, harsher restrictions on mixing at Christmas in England, Scotland and Wales, and other countries placing the UK on a travel ban.

### Why is this variant causing concern?

Three things are coming together that mean it is attracting attention:

- It is rapidly replacing other versions of the virus
- It has mutations that affect part of the virus likely to be important
- Some of those mutations have already been shown in the lab to increase the ability of the virus to infect cells

### How much faster is it spreading?

It was first detected in September. In November around a quarter of cases in London was the new variant. This reached nearly two-thirds of cases in mid-December.

"The amount of evidence in the public domain is woefully inadequate to draw strong or firm opinions on whether the virus has truly increased transmission," said Prof Jonathan Ball, a virologist at the University of Nottingham.

### How far has it spread?

It is thought the variant either emerged in a patient in the UK or has been imported from a country with a lower ability to monitor coronavirus mutations.

The variant can be found across the UK, except Northern Ireland, but it is heavily concentrated in London, the South East and eastern England. Cases elsewhere in the country do not seem to have taken off.

Data from Nextstrain, which has been monitoring the genetic codes of the viral samples around the world, suggest cases in Denmark and Australia have come from the UK. The Netherlands has also reported cases.

A similar variant that has emerged in South Africa shares some of the same mutations, but appears to be unrelated to this one.

### Has this happened before?

Yes.

The virus that was first detected in Wuhan, China, is not the same one you will find in most corners of the world.

The D614G mutation emerged in Europe in February and became the globally dominant form of the virus. Another, called A222V, spread across Europe and was linked to people's summer holidays in Spain.

### What do we know about the new mutations?

An initial analysis of the new variant has been published and identifies 17 potentially important alterations.

There have been changes to the spike protein - this is the key the virus uses to unlock the doorway to our body's cells.

One mutation called N501Y alters the most important part of the spike, known as the "receptor-binding domain".

This is where the spike makes first contact with the surface of our body's cells. Any changes that make it easier for the virus to get inside are likely to give it an edge.

"It looks and smells like an important adaptation," said Prof Loman.

The other mutation - a H69/V70 deletion, in which a small part of the spike is removed - has emerged several times before, including famously in infected mink.

Work by Prof Ravi Gupta at the University of Cambridge has suggested this mutation increases infectivity two-fold in lab experiments.

Studies by the same group suggest the deletion makes antibodies from the blood of survivors less effective at attacking the virus.

Prof Gupta told me: "It is rapidly increasing, that's what's worried government, we are worried, most scientists are worried."

### Where has it come from?

The variant is unusually highly mutated. The most likely explanation is the variant has emerged in a patient with a weakened immune system that was unable to beat the virus. Instead their body became a breeding ground for the virus to mutate.

### Does it make the infection more deadly?

There is no evidence to suggest that it does, although this will need to be monitored.

However, just increasing transmission would be enough to cause problems for hospitals. If the new variant means more people are infected more quickly, that would in turn lead to more people needing hospital treatment.

### Will the vaccines work against the new variant?

Almost certainly yes, or at least for now.

All three leading vaccines develop an immune response against the existing spike, which is why the question comes up.

**Vaccines train the immune system to attack several different parts of the virus, so even though part of the spike has mutated, the vaccines should still work.**

"But if we let it add more mutations, then you start worrying," said Prof Gupta.

"This virus is potentially on a pathway for vaccine escape, it has taken the first couple of steps towards that."

Vaccine escape happens when the virus changes so it dodges the full effect of the vaccine and continues to infect people.

This may be the most concerning element of what is happening with the virus.

This variant is just the latest to show the virus is continuing to adapt as it infects more and more of us.

A presentation by Prof David Robertson, from the University of Glasgow, concluded: "The virus will probably be able to generate vaccine escape mutants."

That would put us in a position similar to flu, where the vaccines need to be regularly updated. Fortunately the vaccines we have are very easy to tweak.

*By James Gallagher Health & Science Correspondent BBC, News, Dec. 2020*

# लक्षण नदेखिएका संक्रमितलाई कोरोनाले के-के असर गर्छ ?

**डा. नीरज बम**
सह-प्राध्यापक तथा वरिष्ठ छातीरोग विशेषज्ञ

कोरोना संक्रमित बिरामीको संख्या नेपालमा बढ्दो छ । साथै मृतकको संख्या पनि दिनानुदिन बढिरहेको छ । हालसम्मको विश्वको तथ्यांक हेर्दा ८०% संक्रमितमा लक्षण नै देखिएको छैन वा साधारण रूघाखोकी जस्ता लक्षण देखा परेका छन् ।

करिब १५% संक्रमितको अवस्था जटिल हुने र उनीहरूलाई अस्पताल भर्ना गरि अक्सिजन दिनुपर्ने हुनसक्छ । ५% संक्रमितलाई भने सघन उपचार कक्ष (आइसीयू)मा भेन्टिलेटरको सहयोगमा उपचार गर्नुपर्ने आवश्यकता पर्दछ । कोरोनाबारे विभिन्न अध्ययन अनुसन्धानहरू भइरहेका छन् र यस सम्बन्धी विभिन्न जिज्ञासा र भम्र पनि यथावतै छन् ।

## कोरोनाका बिरामीलाई निको हुन कति समय लाग्छ ?

साधारण लक्षण भएका बिरामीलाई निको हुन करिव २ हप्ता समय लाग्छ भने जटिल बिरामीलाई निको हुन ३-६ हप्ता लाग्न सक्छ ।

## मृत्यु भएकाहरूको समूह कस्तो छ ?

नेपाल र भारतको तथ्यांक हेर्ने हो भने ६० वर्षभन्दा माथि उमेर समूहका संक्रमितको मृत्यु धेरै भइरहेको छ । चीनमा गरिएको अध्ययन अनुसार ८० वर्षभन्दा माथिका बिरामीमा २१.९%, जागिरबाट सेवा निवृत्तहरूमा ८.९%, मुटुरोगी १३.२%, मधुमेहमा ९.२%, उच्च रक्तचापमा ८.४%, दीर्घ फोक्सो रोगीमा ८%, क्यान्सरका बिरामीमा ७.६% र पहिला कुनै पनि रोग नभएका व्यक्तिमा १.४% मृत्युदर देखिएको थियो ।

संक्रमित मध्ये पुरूषको मृत्युदर ४.७% र महिलाको मृत्युदर २.८% रहेको छ ।

## कोरोना संक्रमितले के सधैंका लागि प्रतिरोधात्मक शक्ति विकास गर्छन् ?

कोरोना संक्रमितको शरीरमा भविष्यमा कोरोनासँग सुरक्षित रहन एण्टीवडी विकास हुन्छ । यद्यपि उनीहरूमा कोरोना धेरै पछिसम्म दोहोरिँदैन भन्ने यथेष्ट प्रमाणहरू छैनन् । कोरोना संक्रमितको शरीरमा विकास भएको कोरोना विरूद्धको एण्टीवडी कहिलेसम्म शरीरमा सुरक्षित रहन्छन् भन्ने तथ्य पनि यकिन भइसकेको छैन ।

## के सबै कोरोना संक्रमित अस्पताल भर्ना हुनैपर्छ ?

विश्व स्वास्थ्य संगठन (डब्ल्यूएचओ)का अनुसार विशेषगरी लक्षण भएका कोरोना संक्रमित, दीर्घरोगी र रोग प्रतिरोधात्मक क्षमता कम भएका बिरामीलाई स्वास्थ्य संस्थाहरूमा भर्ना गर्नुपर्दछ । तर धेरै देशहरूमा संक्रमितको संख्या अत्याधिक हुँदै गएकाले लक्षण नभएका स्वस्थ पृष्ठभूमि भएका संक्रमितहरू मापदण्ड पूरा गरी घरमै आइसोलेट भएर बस्न सक्नुहुन्छ ।

## कोरोना भाइरस खाद्यवस्तुबाट पनि सर्छ ?

अहिलेसम्म कोरोना भाइरस खाद्यवस्तुबाट सर्ने प्रमाणित भएको छैन । तर खाद्यवस्तु र प्याकेजिङ्गवस्तु संक्रमितको सम्पर्कमा रहेको छ भने जोखिम हुन्छ । यो श्वाशप्रश्वासको माध्यमबाट सर्ने भएकाले संक्रमितले खोक्दा, हाछ्युँ गर्दा निस्कने कणबाट सर्ने तथ्य पत्ता लागेको छ । भाइरस खाद्य वस्तुमा वृद्धि नहुने र यसलाई वृद्धि हुनलाई जनावर वा मानिसको शारीरिक वातावरण आवश्यक पर्दछ ।

## के दिशा पिसाबबाट कोरोना संक्रमण फैलिन सक्छ ?

कोरोना भाइरसले आन्द्रामा संक्रमण गर्न सक्छ । एक अध्ययन अनुसार कोरोना भाइरस दिसाबाट कल्चर गरिएको छ । तर पनि अहिलेसम्म मलमूत्रबाट संक्रमण भएको पाइएको छैन ।

## कोरोना संक्रमित आमाले बच्चालाई स्तनपान गराउन सक्छिन् ?

संक्रमित आमा सिकिस्त भएर बच्चालाई स्तनपान गराउन असमर्थ छिन् भने स्तनबाट दूध निचोरेर कुनै सफा भाँडोबाट बच्चालाई दूध खुवाउन सकिन्छ । संक्रमित आमा गम्भीर बिरामी भएकी छिन वा स्तनबाट दुध निकाल्न असमर्थ छिन भने अन्य आमाको सहयोग लिई स्तनपान गराउन सकिन्छ । त्यो पनि सम्भव नभए आमा तन्दुरूस्त नहुञ्जेल वैकल्पिक दुधको प्रयोग गर्नुपर्ने हुनसक्छ । तर संक्रमित आमाको दुधबाट कोरोना संक्रमण हुने प्रमाण अहिलेसम्म भेटिएको छैन ।

## संक्रमितले छोएका सामानहरूबाट कोरोना सर्छ ?

संक्रमित व्यक्तिले खोक्दा, हाच्छ्युँ गर्दा नाक, मुखबाट निस्कने छिटाका कणहरू टेलिफोन, टेबल, चुक्कुल आदि सामानहरूमा टाँसिएर बसेका हुन सक्छन् । यदि स्वस्थ व्यक्तिले यस्ता सामान छोएर हातले नाक, मुख, आँखा छोएमा यो भाइरस सर्न सक्छ । तर कति समयसम्म यस्ता वस्तुका सतहमा कोरोना भाइरस सक्रिय रहन्छन् भन्ने यथेष्ट प्रमाण छैन ।

### अन्य फ्लू भाइरसभन्दा कोरोना किन खतरनाक छ ?

मौसमी फ्लूका विरूद्ध संसारमा धेरै व्यक्तिहरूले रोग प्रतिरोधात्मक शक्ति विकास गरिसकेका हुन्छन् । तर कोरोना भाइरस नितान्त नयाँ भाइरस भएकाले यस विरूद्ध संसारमा कसैसँग पनि प्रतिरोधात्मक शक्ति थिएन । त्यसैले कुनै पनि व्यक्तिमा यो भाइरसले आक्रमण गर्न सक्छ ।

मौसमी फ्लूबाट संसारमा १% भन्दा कमको मृत्यु भएको तथ्यांक छ । तर कोरोना संक्रमणको दर अहिले ३.४% रहेको छ ।

### के अल्कोहल (मद्यपान) ले कोरोना संक्रमणलाई रोक्छ ?

अल्कोहलले शरीरभित्रको वातावरणमा रहेको भाइरसलाई नष्ट गर्न सक्दैन । मद्यपानले संक्रमितको रोग प्रतिरोधात्मक शक्ति झनै घटाउँछ । ६०% अल्कोहलबाट बनेको स्यानिटाइजरले छालामा रहेको भाइरसलाई निष्कृय गर्न सक्छ । तर शरीरभित्र रहेका भाइरसमा यसले असर पुर्याउन सक्दैन ।

### के धुम्रपान र कोरोना संक्रमण एक आपसमा सम्बन्धित छन् ?

धुम्रपानले श्वासप्रश्वासका धेरै रोगहरूलाई बढावा दिन्छ । जस्तै दम, रूघाखोकी, चिसो इन्फ्लएन्जा, निमोनिया, क्षयरोग आदि । श्वाश्प्रश्वास नलीहरूमा धुम्रपानले गरेका असरका कारण कोरोना भाइरस छिट्टै नलीमा आकर्षित हुने अध्ययनले देखाएको छ ।

अत्याधिक धुम्रपान गर्ने व्यक्तिलाई कोरोना संक्रमण हुँदा छिट्टै एक्यूट रेस्पिरेटरी डिस्ट्रेस सिण्ड्रोम जस्तो जटिल अवस्थामा पुऱ्याउँछ ।

### कति तापक्रममा यो भाइरस नष्ट हुन्छ ?

१५ मिनेटसम्म ५६ डिग्री सेल्सियस तापक्रम रहेमा कोरोना भाइरस १० हजार यूनिटसम्म झरेर मर्ने अनुसन्धानबाट पत्ता लागेको छ ।

### संक्रमणबाट कसरी बच्ने ?

कोरोना संक्रमणको लक्षणिक उपचार बाहेक प्रमाणित उपचार हालसम्म नरहेकाले व्यक्तिगत सुरक्षाका निर्देशित मापदण्ड पालना गर्नु नै अति उत्तम उपाय हो । विगत ६ महिनादेखि भएका अध्ययन अनुसार हात तथा व्यक्तिगत सफाई, भौतिक दुरीलाई ख्याल गर्ने, सही तरिकाबाट मास्कको प्रयोग, हरियो सागपात तथा भिटामिनयुक्त पोषिलो खानेकुराहरू खानुपर्दछ । धुम्रपान र मद्यपान गर्नै हुँदैन ।

### संक्रमणबाट जोगिन कस्ता मास्क प्रयोग गर्नुपर्दछ ?

चिकित्सक, नर्स लगायतका स्वास्थ्यकर्मी तथा स्वास्थ्य संस्थाका कर्मचारी, संक्रमित व्यक्ति र उनका सम्पर्कमा रहेका व्यक्ति, वृद्ध-वृद्धा र दीर्घरोगीले अनिवार्य रूपमा एन-९५ जस्ता फिल्टरसहित मास्कको प्रयोग गर्नुपर्दछ । जोखिम कम भएका स्वस्थ व्यक्ति वा अन्यले काममा जाँदा मेडिकल सर्जिकल मास्कको अनिवार्य प्रयोग गर्नुपर्दछ ।

### के लक्षण नभएका संक्रमितबाट कोरोना सर्छ ?

लक्षण नभएका संक्रमितबाट भाइरस अन्य व्यक्तिमा सर्न सक्ने सम्भावना कम हुन्छ । त्यस्ता संक्रमितमा खोकी वा हाच्छ्युँ कम हुने गर्छ । करिब ५ कोरोना संक्रमितमध्ये एक जनामा सास फेर्न गाह्रो हुने अध्ययनहरूले देखाएका छन् । ६० वर्ष भन्दा माथिका र दीर्घरोगीहरू जस्तै दम, मधुमेह, मुटुको समस्या, उच्च रक्तचाप, क्यान्सर लगायतका रोग प्रतिरोधात्मक शक्ति कमजोर भएका तथा अत्याधिक धुम्रपान र मद्यपान गर्नेहरू संक्रमणको उच्च जोखिममा रहन्छन् ।

### लक्षण नै नदेखिएका कोरोना संक्रमितमा भविष्यमा के-कस्ता असर देखिन सक्छन् ?

विगत १०-११ महिनादेखि यो संक्रमण देखिएको हो । त्यसैले यसबारेमा अध्ययन अनुसन्धानहरू भइरहेका छन् । फोर्ब्स जर्नलका अनुसार नेदरल्याण्डमा भएको अध्ययन अनुसार घरमै संक्रमण पश्चात् मनोवैज्ञानिक त्रास र समस्या कायमै रहेको भेटिएको छ ।

१ हजार ६२२ संक्रमितमा गरिएको एक अध्ययन अनुसार ४५% लाई छाती भारी हुने, ३६% लाई शरीर तथा टाउको दुख्ने, २९% लाई चक्कर लाग्ने, ३०% लाई मुटुको ढुकढुकी बढ्ने समस्या पाइएको थियो । यतिमात्रै होइन निकट भविष्यमा रोग प्रतिरोधात्मक शक्ति घट्न सक्ने पनि अध्ययनले देखाएको छ । यसबाट के भन्न सकिन्छ भने लक्षण भएकालाई मात्रै होइन लक्षण नै नभएका संक्रमितलाई पनि यसको असर लामो समयसम्म देखिन्छ ।

एनल्स अफ इन्टरनल मेडिसिन जर्नलका अनुसार फोक्सोमा साना-साना इन्फ्लामेशन देखिएका छन् । केही लक्षण नभएका संक्रमितमा भविष्यमा फोक्सोका दीर्घरोग उत्पन्न गराउँन सक्छ । न्यू-एरिजोना कन्सर्नका अनुसार लक्षण नभएका कोरोना संक्रमितमा छातीको सिटी स्क्यान गर्दा केही दागहरू देखिएका छन् र भविष्यमा श्वासप्रश्वासका रोग लगायत प्रतिरोधात्मक क्षमतामा कस्तो असर पुऱ्याउँछ, यस सम्बन्धमा अध्ययन जारी छ ।

**- हेल्थपाटीको लेखबाट साभार गरिएको डा. नीरज बम सँगको छोटो कुराकानी**

# गर्दन दुखाई
# Neck Pain

डा. सन्दिप अधिकारी
अर्थोपेडिक्स सर्जन

**गर्दन दुखाई (Neck Pain)** चिकित्सक परामर्श लिन आउने एउटा साधरण तथा बारम्बार आउने अवस्था हो । १० देखि २० प्रतिशत बिरामीहरू वार्षिक रूपमा गर्दन दुखाईको कारण चिकित्सक परामर्शको लागि आउने गर्दछन् । गर्दन दुखाई धेरै मध्यम उमेर वर्गमा देखिने गर्छ र त्यसमा पनि महिला समुदायमा अलि बढि देखिने गर्छ ।

गर्दन दुखाईलाई विभिन्न वर्गमा विभाजन गरेर निदान तथा उपचार गरिन्छ । यद्यपी सामान्य बुझाईका लागि हामीले गर्दन दुखाईलाई ३ मुख्य रूपमा विभाजन गर्न सक्छौं ।

- मेकानिकल दुखाई (Mechanical Neck Pain)
- चोटपटक / स्पाइनल इन्जुरी (Spinal Injury)
- नशा च्यापिएर हुने दुखाई (Radiculopathy)

गर्दन (Neck) हाम्रो टाउकोलाई शरीरसँग जोड्ने र शरीर र आँखाको दिशाबोध गराउन चाहिने मेरूदण्डको उपल्लो भाग हो । गर्दनमा मेरूदण्डका उपल्लो ७ वटा हड्डी हुन्छन् जसलाई Cervical Vertebrae भनिन्छ । ती ७ वटा हड्डी तथा मांसपेशीले Cervical Spine बनाउँछन् । स्पाइन (Spine) हड्डीका मांसपेशी (Paraspinal Muscles) र स्पाइनल कर्ड (Spinal Cord) बाट निस्किएका नशाहरू गर्दन देखि कम्मरसम्म पुगेका हुन्छन् । यिनै स्पाइनल संरचनामा कुनै किसिमको प्रतिकुलता आउँदा गर्दन तथा ढाड दुख्ने समस्या आउने गर्दछन् ।

## मेकानिकल पेन (Mechanical Pain)

मेकानिकल पेनमा (Mechanical Pain) मांसपेशीका कमजोरीका कारण गर्दनको हड्डीमा असामान्य तथा प्रतिकुल लोड पर्ने गर्छ र क्रमश दुखाइको अनुभूति हुने गर्छ । धेरैजसो यस किसिमको समस्या मध्यम उमेरका मानिसमा र महिला वर्गमा देखिन्छ । गर्दन र ढाड दुखाईमा जीवनशैली तथा कार्यशैलीको ठूलो भूमिका हुन्छ । लामो समय मोटरसाइकल सवारी गर्ने तथा धेरै समय टेबल वर्क गर्नेमा यस किसिमको दुखाई देखिने गर्छ । गर्दन दुखाई सँगसँगै ढाड दुखाई, मानसिक तनाभ, डिप्रेशन र थाइरोईड रोग पनि सँगसँगै देखा पर्ने हुन सक्छ । जीवनशैली परिवर्तन र प्रतिकुल असर पर्ने कामहरूको निवारण सँगै धेरै जसो Mechanical neck pain निको हुने गर्छ ।

## स्पाइनल इन्जुरी (Spinal Injury)

कुनै कारणले गर्दन वा टाउँको वरि परी चोटपटक लाग्दा गर्दनको हड्डी टुट्ने वा सर्ने गर्दा पनि गर्दन दुखाई हुन सक्छ । यस्तो अवस्थामा अचानक दुखाई तथा प्यारालाईसिस (Paralysis) वा दीर्घकालिन दुखाई पनि हुने गर्छ । कुनै पनि Spinal Injury मा तुरून्त चिकित्सक परामर्श र उपचार चाहिन्छ । यस्तो अवस्थामा निदानका लागि X-ray, सिटी स्क्यान (CT Scan) अथवा MRI चाहिन सक्छ । उपचारको लागि शल्यचिकित्सा पनि जरूरी पर्न सक्छ ।

## नशा च्यापिएर हुने दुखाई (Radiculopathy)

तेस्रो मुख्य कारण गर्दनको भागमा रहेका नशाहरू (Spinal Nerves) च्यापिएर गर्दनको मांसपेशी र हातहरू निदाउने समस्या हो । यस अवस्थालाई Cervical Radiculopathy भनिन्छ । यो अवस्था उमेर बढ्दै गएपछि हड्डी खिईएर नशा निस्कने ठाउँ साँगुरिएर नशा च्यापिने हुँदा हात तथा खुट्टा निदाउने, झमझमाउने र गर्दनको मांसपेशी अररो हुने समस्या आउन सक्छ । यस्तो अवस्थामा पनि औषधि सेवन, जीवनशैली परिमार्जन, फिजियो थेरपी तथा शल्यचिकित्सा उपचारका विधि हुन् ।

गर्दन दुखाई धेरै मानिसमा देखिने भएका कारणले नै अधिकांश रूपमा यस समस्यालाई बेवास्ता गरिने गरिन्छ । समस्याले एकदमै ग्रसित बनाए पछि मात्र चिकित्सक सल्लाह तथा परामर्श लिन आउने चलन रहेको हुन्छ । जुनसुकै उमेर र जुनसुकै जातिमा देखिने यो एउटा समस्या हो जसको निदान र उपचार बेलैमा गर्नुपर्छ । अधिकांश गर्दन दुखाईको उपचार औषधी सेवन, फिजियोथेरापी र जीवनशैली परिवर्तन मार्फत गर्न सकिन्छ । नियमित र प्रक्रियागत व्यायाम, स्वस्थ खानपान तथा कार्य शैली परिमार्जन मात्रले अधिकांश गर्दन दुखाई निको हुने गर्दछ । बाँकी कारणलाई आवश्यकता अनुसार फिजियोथेरापी र शल्यचिकित्साको पनि आवश्यकता चाहिन सक्छ ।

# Sinonasal Malignancies

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Sinonasal malignancies are rare tumours with the incidence of 0.5-1/100,000 per year (0.2-0.8%) of all malignancies and 3-5% of upper aerodigestive tract neoplasm. Although rare, these malignancies are one of the most challenging malignancies in head and neck cancer. They produce few if any signs while the tumor is in its early stage. Due to relatively innocous initial symptoms and complex anatomy they are difficult to detect early and have late presentation at unresectable stage. Due to close vicinity to vital structures such as the orbit, skull base, brain, optic nerve and internal carotid artery they pose significant challenges for their treatment and may be the source of significant morbidity to the patients.

## Types

According to WHO classification there are 44 different histologic types of sinonasal malignancies and the vast majority of them are epithelial origin. Out of them squamous cell carcinoma is the commonest type (50-80%) followed by malignant melanoma, adenoid cystic carcinoma and adenocarcinoma. Lymphoma is the most commonly reported non-epithelial tumour.

## Etiology

Unlike other cancers, in the head and neck there does not appear to be any predominant risk factor. There appears to be some association with exposure to the following industrial materials:

- Furniture industry, sawmill, carpentry or other wood related industries (exposure to wood dust)
- Dusts from textiles (textile plants)
- Leather dusts (shoe making)
- Flour (baking & flour milling)
- Mine workers such as Nickel and Chromium dust
- Mustard gas (a poison used in chemical warfare)
- Radium (a radioactive element rarely used today)
- HPV and tobacco smoke

## Clinical features

Like other head and neck malignancies sinonasal malignancies are more common in male with mean age of 50-59 years.

Most of the time initial symptoms will be similar to rhinosinusitis. Patients usually present with:

- Unilateral blood mixed nasal discharge
- Progressive nasal obstruction

Other symptoms of maxillary carcinoma can be:

- Loosening or ill-fitting denture
- Numbness of the upper teeth
- Paresthesia or numbness or pain on the cheek

Advanced sinonasal tumours may be present with:

- bulging of the hard palate
- cheek swelling
- protrusion of eye
- double or blurred vision
- tearing

Very advanced lesions can be presented as:

- loss of vision
- craniopathy

Extremely advanced lesions will be present with:

- Inability to open the mouth,
- Hearing loss
- Severe headache
- Ear ache and
- Changes in the mental status

Though lymph node involvement is not very common, in advanced stages enlarged lymph nodes in the neck can occur.

*Fig.1 Ca left maxilla with cheek and hard palate involvement*

## Investigations

### 1. Imaging

**Contrast enhanced CT (CECT):** Nose and PNS is the investigation of choice having 85% accuracy. It helps to detect tumour location and bone erosion. However, it cannot differentiate tumour from inflammation and secretion.

**Magnetic Resonance Tomography (MRI)** nose and PNS provides following information:

- Soft tissue details
- Cavernous sinus invasion
- Orbital extension
- Intracranial extension
- Skull base invasion
- Carotid artery invasion

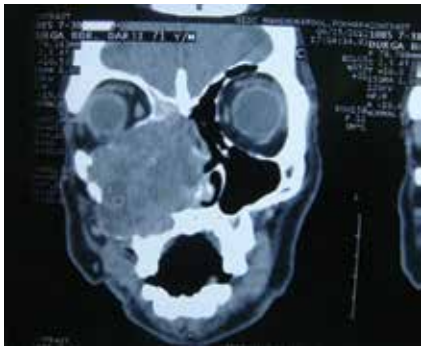


*Fig 2 CECT Scan of Nose & PNS coronal cut showing mildly enhancing mass right maxilla with erosion of walls of the sinus envolving right nasal cavity and ethmoid.*

**T2 weighted images** distinguish between retained secretions, mucosal thickening or tumour.

**T1 weighted images** show hypo to isointense signal whereas T2 weighted images vary depending upon cellularity of the tumour. Mucinous or cartilaginous tumours show marked hyper intensity, hyper cellular tumours show slight hyper intensity, and tumours with fibrosis, calcification or flow void show hypointensity.

**Diffusion weighted image** with measurement of ADC will distinguish between benign and malignant tumours.

*Fig.3 Mesh to repair anterior lateral wall of Right maxilla*

**2. Ultrasonography and FNAC:**

This investigation will be useful only in presence of neck nodes to rule out metastatic neck nodes.

**3. Biopsy :**

Biopsy is the confirmatory investigation for tissue diagnosis which is mandatory.

## Treatment

The treatment modalities vary depending on the tumour histological subtype, location, and extent of the disease. It includes surgery, radiation, chemotherapy, or a combination of two or more of these modalities. For T1 and T2 stage surgery will be sufficient whereas for T3 and T4 multimodality treatment is necessary. Super selective intra-arterial Cisplatin infusion and concomitant radiotherapy (RADPLAT) have shown promising result in advanced sinonasal malignancies. Immune therapy will be future novel therapy.

The prognosis of the patients largely depends on tumor histology, location, and stage.

*Fig. 4 Following Radical maxillectomy*

*For reference please mail at mpd@timepharma.com*

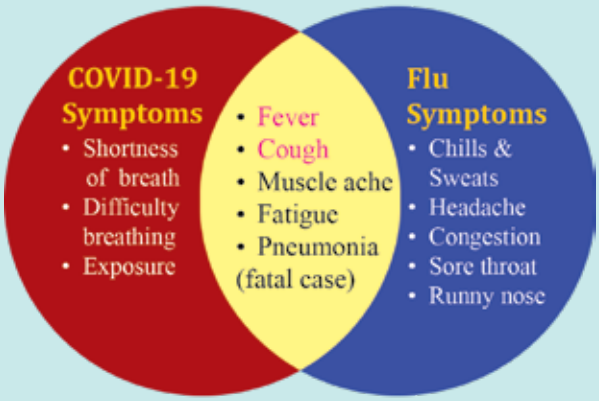


# Is it COVID-19 or FLU?

*Phr. Bikash Kafle*

As the COVID-19 outbreak continues to evolve, comparisons have been drawn to influenza. Influenza "the flu" and COVID-19, the illness caused by the new coronavirus, are both infectious respiratory illnesses. Although the symptoms of COVID-19 and the flu can look similar, the two illnesses are caused by different viruses.

Let us explain how the flu and COVID-19 are similar and how they are different.




## Similarities: COVID-19 and the Flu

### Transmission

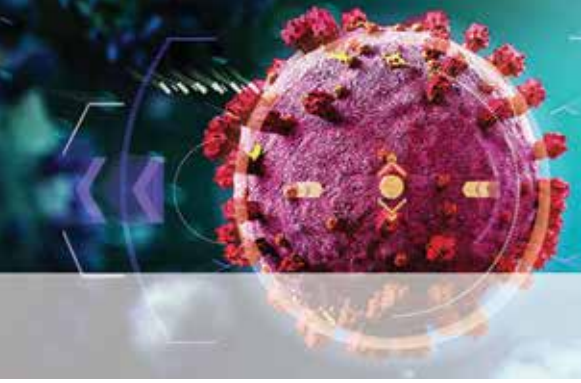
- Both can be spread from person to person through droplets in the air from an infected person coughing, sneezing or talking.
- Also can be transmitted via objects or materials which are likely to carry infection, such as clothes, utensils, and furniture.

### Treatment

- Neither of viruses is treatable with antibiotics, which only work on bacterial infections.
- Both may be treated by addressing symptoms, such as reducing fever. Severe cases may require hospitalization and support such as mechanical ventilation.

### Prevention

Both may be prevented by frequent, thorough hand washing, covering nose and mouth with masks, staying home when sick and limiting contact with people who are infected.



# कोरोना भाइरस र बालबालिका

**Dr. Anil Kr. Yadav**
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## के कोभिड-१५ ले बालबालिकालाई असर गर्छ ?

यो एक नयाँ प्रकारको भाइरस भएको कारण यसले बालबालिका तथा गर्भवती महिलालाई कसरी असर गर्छ भन्ने बारे विस्तृत जानकारी उपलब्ध छैन । यस भाइरसले सबै उमेरका मानिसमा संक्रमण गर्नसक्ने भएतापनि हालसम्म बालबालिकाहरूमा कोभिड-१९ को संक्रमण तुलनात्मक रूपमा कमै मात्र पाईएको छ। हालसम्म कोभिड-१९ का कारण मृत्यु भएको संख्या एकदमै न्युन छ, जसमा पहिलै देखि स्वास्थ्य सम्बन्धी समस्या भएका ज्येष्ठ नागरिकहरु पर्दछन् ।

## मेरा बालबालिकामा कोभिड-१५ का लक्षण देखिएमा के गर्ने ?

कोभिड-१९ को लक्षण देखिएमा स्वास्थ्य सेवा लिनुपर्दछ तर कृपया याद राख्नुहोस खोकी र ज्वरोजस्ता सामान्य रूघाखोकीको लक्षण र कोभिड-१९को लक्षण उस्तै देखिन सक्छ र हालको मौसममा धेरैलाई सामान्य रूघाखोकी मात्रै लागेको हुनसक्छ ।

नियमित रूपमा हात धुने जस्ता हात तथा श्वासप्रश्वासको सरसफाईका आनिबानीमा विशेष ध्यान दिँदै बालबालिकालाई खोपपनि अध्यावधिक गर्नुहोस् ताकि उनीहरूलाई अन्य भाइरस तथा ब्याक्टेरियाबाट हुने संक्रमणबाट जोगाउन सकियोस् ।

आफ्ना बालबालिकामा फ्लु जस्ता श्वासप्रश्वास सम्बन्धी अन्य संक्रमणको लक्षण देखिएमा स्वास्थ्य संस्थामा सम्पर्क गर्नुहोस् र अस्लाई संक्रमणबाट जोगाउन भिडभाड हुनसक्ने कार्यालय, विद्यालय, सार्वजनिक यातायात जस्ता सार्वजनिक स्थानबाट टाढै रहनुहोस् ।

## परिवारको सदस्यमा लक्षण देखिएमा के गर्ने ?

तपाईं आफु वा आफ्ना बालबालिकामा ज्वरो आएमा, खोकी लागेमा वा श्वास फेर्न कठिनाई भएमा स्वास्थ्य संस्थामा सम्पर्क गर्नुहोस् । आफु कोभिड-१९ को संक्रमण भएको स्थानमा गएको वा उक्त स्थानहरूमा पुगेका र श्वासप्रश्वास सम्बन्धी समस्या देखिएका अन्य कोहिसँग सम्पर्कमा आएको भएमा स्वास्थ्यकर्मीलाई प्रत्यक्ष भेट्नु भन्दा पहिल्यै फोन गरेर जानकारी दिनुहोस् ।

## के मैले मेरा छोराछोरीलाई विद्यालय जानबाट रोक्नुपर्दछ ?

यदि तपाईंका बालबालिकामा यसका लक्षण देखिएमा स्वास्थ्य संस्थामा सम्पर्क गर्नुहोस् र स्वास्थ्यकर्मीको सल्लाह लिनुहोस्। अन्यथा श्वासप्रश्वास सम्बन्धी सामान्य रूघाखोकी जस्ता समस्या देखिएमा अन्य समयमा जस्तै घरैमा मनग्गे आराम

## Differences : COVID-19 and the Flu

The COVID-19 situation is changing rapidly, with recently new strain has been found in UK. Since this is a new virus, people do not have immunity to it, and vaccine for all may be many months away. Doctors and scientists are working on estimating the mortality rate of COVID-19, but at present, it is thought to be higher than that of most strains of the flu.

As of now, there are currently more than 50 COVID-19 vaccine candidates in trials. In light of this fact, some preventive measures i.e.: avoiding close contacts, using masks and sanitizers frequently appears to be the best path available so far to take to keep these viruses at bay.

| | COVID-19 | Flu |
|---|---|---|
| Cause | Novel 2019 coronavirus or SARS-CoV-2 | Several types and strains of influenza viruses |
| Incubation | 1-14 days, may go up to 24 days | 1-4 days |
| Antiviral Medications | Currently being tested | Can address symptoms and sometimes shorten the duration of the illness |
| Vaccine | More than 50 vaccines in clinical trial, WHO approved: BioNTech-Pfizer COVID vaccine | Vaccine is available and effective to prevent or to reduce the severity of the flu. |

| | COVID-19 | Flu |
|---|---|---|
| Infections | More than 90 million cases worldwide (Jan 11, 2021) | Estimated 1 billion cases worldwide. |
| Deaths | More than 19 million deaths reported worldwide (Jan 11, 2020) | 291,000 to 646,000 deaths worldwide |
| Recovery | 2 weeks (mild cases); 2-6 weeks (severe cases) | 1 week (mild cases); 2 weeks (severe cases) |

*Reference: Johns Hopkins Medicine, The New York Times, compoundchem.com, msn.com, WHO, Centers for Disease Control & Prevention*

गराउनुहोस् र अरूमा संक्रमण हुनबाट जोगाउन सार्वजनिक स्थानहरूमा नजानुहोस् ।

यदि तपाईंका बालबालिकामा यसका कुनैपनि लक्षण देखिएका छैनन् र सार्वजनिक रूपमा कुनै स्वास्थ्यसम्बन्धी आधिकारिक निषेधाज्ञा वा सम्बन्धित विद्यालय बारे निषेधात्मक सूचना जारी भएको छैन भने बालबालिकालाई विद्यालय पठाउनु नै उपयुक्त हुन्छ ।

बालबालिकालाई विद्यालय नपठाउनुको विकल्पमा बरु उनीहरूलाई विद्यालय र अन्यत्रका लागि पनि काम लाग्ने गरि श्वासप्रश्वास सम्बन्धी असल व्यवहार सिकाउनुहोस्, जस्तै नियमित रूपमा हात धुने (विस्तृत विधि तल हेर्नुहोस्), खोक्दा वा हाच्छ्युँ गर्दा कुहिनो वा कागजी रूमालले नाक तथा मुख छोप्ने र प्रयोग पश्चात त्यसलाई बन्द फोहोरदानीमा फाल्ने, राम्रोसँग हात नधोईएको अवस्थामा हातले आँखा, नाक वा मुख नछुने आदि ।

## हात धुने उत्तम तरिका के हो?

- बगिरहेको पानीमा हात भिजाउने
- भिजेको हातमा मनग्गे साबुन लगाउने
- हत्केलाको पछाडि, औलाको बीच, नङको भित्र लगायत हातका सबै भागमा कम्तिमा २० सेकेण्डसम्म राम्रोसँग मिच्ने
- बगिरहेको पानीले राम्ररी हात पखाल्ने
- सफा कपडा वा एकपटक मात्र प्रयोग गरिने तौलियाले हात सुकाउने ।

नियमित रूपमा हात धुनुहोस् - खासगरि खाना खानु भन्दा अगाडि र सिंगान पुछ्नु, खोक्नु, हाच्छ्युँ गर्नु र शौचालय आदि गरिसकेपछि।

यदि साबुन र पानी उपलब्ध छैनन् भने कम्तिमा ६०% अल्कोहल भएको जिवाणुनाशक जेल वा क्रिमको प्रयोग गर्नुहोस्। हात फोहोर छ भने सधैं साबुन पानीले हात धुनुहोस्।

## के गर्भवती महिलाबाट बच्चामा कोरोनाभाइरस सर्न सक्छ?

हालसम्म उपलब्ध जानकारीका आधारमा गर्भावस्थामा आमाबाट बच्चामा यो भाइरस सर्ने वा नसर्ने तथा उक्त भाइरसले बच्चामा पार्ने असरका बारेमा पर्याप्त तथ्य उपलब्ध छैन । यस विषयमा हाल अध्ययन भइरहेको छ । गर्भवती महिलाहरूले भाइरसबाट जोगिन उपयुक्त सावधानी अपनाउनु पर्दछ र ज्वरो, खोकी वा सास फेर्न कठिनाई जस्ता लक्षणहरु देखिएमा समयमै स्वास्थ्य संस्थामा सम्पर्क गर्नु पर्दछ ।

## कोरोनाभाइरस बाट संक्रमित आमाले स्तनपान गराउनु सुरक्षित हुन्छ?

कोरोनाभाइरस प्रभावित तथा यसको जोखिम भएका स्थानमा बसोबास गर्ने सबै आमाहरूले ज्वरो, खोकी वा सास फेर्न कठिनाई जस्ता लक्षणहरु देखिएमा समयमै स्वास्थ्य संस्थामा सम्पर्क गर्नुपर्दछ र प्राप्त सल्लाह अनुसार गर्नुपर्दछ ।

स्तनपानको महत्व र भाइरस प्रसारणमा यसको नगन्य भूमिकालाई ध्यानमा राख्दै स्तनपानलाई निरन्तरता दिन सकिन्छ । तर भाइरसबाट जोगिनका लागि अन्य सावधानीहरु भने अपनाउनु पर्दछ ।

लक्षण देखिएका तर सबल आमाहरूले भने स्तनपान गराउँदा र बालबालिका सँग नजिक हुँदा मास्क लगाउने, बालबालिकाको सम्पर्कमा आउनुभन्दा अगाडि तथा पछाडि हात धुने, संक्रमित वस्तु तथा सतहहरूलाई जिवाणु नाश हुने गरि सफा गर्ने गर्नुपर्दछ जुन अन्य अवस्थामा पनि कोभिड-१९ भएको शंका लागेका वा संक्रमित बालबालिका तथा वयस्कहरू सँग अन्तक्रिया गर्दा अपनाउनु पर्ने हुन्छ ।

आमा निकै नै अस्वस्थ भएको अवस्थामा उनको दुध निकाली सफा कप वा चम्चाले शिशुलाई खुवाउन सकिन्छ र भाइरसबाट जोगिनका लागि अन्य सावधानीहरु निरन्तर अपनाउनु पर्दछ ।

## युनिसेफले कसरी सहयोग गरिरहेको छ?

कोभिड-१९ बाट धेरै प्रभावित चीन सरकार र पूर्वी एसिया तथा प्रशान्त क्षेत्रका राष्ट्रहरूलाई सघाउनमा हाल युनिसेफको सहयोग केन्द्रित छ । २९ जनवरी देखि युनिसेफले स्वास्थ्यकर्मीहरूलाई आवश्यक सुरक्षा सुट, मास्क, चस्मा तथा पञ्जा समावेश गरि १३ टन सामग्री प्रभावित क्षेत्रमा पैठारी गरिसकेको छ। थप सामग्री तयारी अवस्थामा राखिएको छ र कतिलाई प्रमुख स्थानहरूमा लगेर राखिसकिएको छ ।

भाइरसको अप्रत्याशित प्रकृति र निरन्तर फैलावट हेरेर, ठुलो रोगका प्रकोपबाट बच्नका लागि सिमित क्षमता भएका र कमजोर स्वास्थ्य प्रणाली भएका देशहरूको सहयोगका लागि युनिसेफले जोखिमको सामना गर्नका लागि आकस्मिक योजनाहरूको विकास गर्न सम्बन्धित सरकारहरु, विश्व स्वास्थ्य संगठनका निर्दिष्ट विभागहरु र अन्य साझेदारहरूसँग समन्वय गरिरहेको छ ।

कोभिड-१९ को नियन्त्रणका लागि आवश्यक सहयोगका काम गर्न युनिसेफले १६ फेब्रुअरीमा ४ करोड २३ लाख अमेरिकी डलरको आव्हान गरेको थियो । यस प्रारम्भिक रकमले युनिसेफलाई बालबालिका, गर्भवती महिला तथा तिनका परिवारलाई कोभिड-१९ को संक्रमणबाट जोगिने र आवश्यक सहयोग खोज्ने बारेमा जोखिम सम्बन्धी सुचना संप्रेषण तथा गलत सुचनाको प्रवाह नियन्त्रण गरी कोभिड-१९ को फैलावट रोक्न सहयोग पुर्याउनेछ ।

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# Bacterial RTI - Epidemiology, Diagnosis, Treatment & Market Trend

*Phr. Bikash Kafle*

National Institute of Health and Care Excellence defines Respiratory Tract Infection (RTI) as any infectious disease of the upper or lower respiratory tract. Upper Respiratory Tract Infections (URTIs) include the common cold, laryngitis, pharyngitis/tonsillitis, acute rhinitis, acute rhinosinusitis and acute otitis media. Lower respiratory tract infections (LRTIs) include acute bronchitis, bronchiolitis, pneumonia and tracheitis.

## Epidemiology

Respiratory conditions impose enormous burden on society. Reports indicated that the top five respiratory diseases accounted for 17.4% of all deaths and 13.3% of all Disability- Adjusted Life Years (DALYs). Also, out of total acute respiratory disease, 20-24% of deaths are accounted for by Lower Respiratory Tract Infection (LRTI). During antibiotic therapy, emergence of resistant strains may occur, which is one of the contributing factors for the increase in the frequency of LRTI in recent years in the adult population of Nepal as well. *(Journal of Institute of Medicine Nepal, 2006)*

Unlike respiratory infections with a viral cause, infections of bacterial origin, while frequent, affect a smaller group of the population, given their characteristics in terms of pathogenicity, transmissibility, and preventive measures such as use of specific vaccines.

Among LRTI, Community Acquired Pneumonia (CAP) is one of the major causes of death and morbidity with an incidence of 20% to 30% in developing countries and 3% to 4% in developed countries. It is projected that Nepal, India, Bangladesh accounts for 40% of global acute respiratory infections. The recent study, which is being carried out at Patan Hospital, Kanti Children's Hospital, Mission Hospital in Palpa, Bheri Hospital in Nepalgunj and BP Koirala Institute of Health Sciences, shows that, pneumonia caused by bacteria is deadlier than that one caused by viruses, and children under-five and people above 65 years of age are highly vulnerable to the disease. *(The Kathmandu Post, 2019)*

The main bacterial causes of pneumonia were *Streptococcus pneumoniae* and *Haemophilus influenzae* type b (Hib). These numbers demonstrate the burden that CAP represents for society and for economic healthcare resources. *(Nepal Journal of Medical Sciences, 2012)*

*Streptococcus pneumoniae*, or *pneumococcus*, is a Gram-positive, spherical bacteria, that resides asymptomatically in healthy carriers typically colonizing the respiratory tract, sinuses, and nasal cavity causing pneumococcal infections. They present throughout the world most commonly during the winter and early spring months.

Although *S. pneumoniae* can occur in all populations, it is more common in patients older than 65 years, younger than 2 years, those who smoke, abuse alcohol, have asthma or COPD, or are asplenic. In recent study of *S. pneumoniae* Carriage Prevalence in Nepal, 1101 children were enrolled into the study: 574 in the urban group and 527 in the rural group. There was concordance of detection of *pneumococcus* in 67% of samples. Using the Silica Desiccant Packages (SDP) method, pneumococcal carriage prevalence was higher in the rural population (69.2%) compared to the urban population (40.9%). *(Streptococcus pneumoniae Carriage Prevalence in Nepal, 2014)*. WHO estimated 1.6 million deaths in 2005 including 1 million children less than 5 years of age, occurred due to *S. pneumoniae*. It is a common co-infection in influenza patients and affects the morbidity and mortality in such patients. *(Streptococcus Pneumoniae, 2020)*

*Haemophilus influenzae* are pleomorphic gram-negative rods that commonly colonize and infect the human respiratory tract. The *H. influenzae* species is divided into typeable (encapsulated) and nontypeable (unencapsulated) strains. Among typeable strains, *H. influenzae* serotype b (Hib) is the most virulent. In areas of the world where Hib vaccination is not widespread, Hib is a leading of cause of meningitis and epiglottitis in children and pneumonia in adults. By contrast, in areas where vaccination is routine, the prevalence of Hib has declined, and the ecologic niche for nontypeable *H. influenzae* has grown. Nontypeable strains tend to be most commonly causing infections along the respiratory mucosa, including otitis media, acute rhinosinusitis, acute bronchitis, acute exacerbations of chronic obstructive pulmonary disease, and pneumonia. *(Epidemiology, clinical manifestations, diagnosis, and treatment of Haemophilus influenzae, 2020)*

Nontypeable *H. influenzae* now causes the majority of invasive *H. influenzae* disease in all age groups which causes 30% to 52% of episodes of acute otitis media and sinusitis in children. It can be a common cause of recurrent otitis media. *(Centers for Disease Control and Prevention, 2020)*

## Diagnosis

Acute respiratory infection is an infection that may interfere with normal breathing. Several potential bacterial pathogens belong to, or are frequently associated with, upper respiratory tract normal microflora. This explains the difficulties in establishing an aetiological role for microorganisms isolated from samples which are expected to be originated in the lower respiratory tract, but which are frequently contaminated by bacteria from higher anatomical areas.

In a respiratory exam, the doctor focuses on breathing. They check for fluid and inflammation in the lungs by listening for abnormal sounds in the lungs during breathe. The doctor may peer into patient's nose and ears, and check throat. If doctor believes the infection is in the lower respiratory tract, an X-ray or CT scan may be necessary to check the condition of the lungs.

Lung function tests have been useful as diagnostic tools. Pulse oximetry, also known as pulse ox, can check how much oxygen gets into the lungs. A doctor may also take a swab from nose or mouth, or ask to cough up a sample of sputum to check for the type of virus or bacteria causing the disease.

In recent years, new technologies have been applied to solve these problems, including detection of microbial specific fragments (for instance, DNA or RNA sequences, and protein or polysaccharide antigens), or combining these detection methods with markers of local inflammatory response *(Clinical Microbiology and Infection, 1996)*. CAP was diagnosed by the presence of acute pulmonary infiltration in a posteroanterior (PA) chest x-ray with at least two of the following symptoms: fever, cough, and purulent sputum. *(Cureus, 2019)* .

## Treatment

The actual antibiotic choice for bacterial LRTIs depends upon the likely organism; however, it is recognized that distinguishing viral from bacterial infections, both in CAP and in acute exacerbations of COPD, and recognizing non-infective COPD exacerbations are not always clear-cut processes.

Antibiotics are the mainstay of therapy for CAP, and the initial antibiotic treatment needs to be empiric, as the causative

organism or organisms are unknown at the time of presentation. The most appropriate choice of initial empiric antibiotic treatment in the different settings: outpatient, inpatient, and intensive care unit (ICU).

Antibiotics are used in two instances in COPD: in order to treat an infection associated with an acute exacerbation of COPD (AECOPD) and for prophylaxis. The most common bacterial organisms isolated in AECOPD remain *Haemophilus influenzae* and *S. pneumoniae*; however, *Moraxella catarrhalis* and the atypical organisms may also be seen. **Viral infections may predispose patients to bacterial infections, and the specific bacteria isolated depend on factors such as: age of more than 65 years, steroid use, comorbid illness such as cardiac disease, structural lung disease, or more severe COPD** *(Global Initiative for Chronic Obstructive Lung Disease (GOLD))* and previous antibiotic use in the past 3 months. The dosing of each antibiotic should be according to pharmacokinetic principles. The beta-lactams are time-dependent agents; as such, the target should be to exceed the minimum inhibitory concentration by as much time as possible, both to limit resistance and to improve outcome *(F1000Research, 2018)*.

## Market Trend:

Many studies and prevailing practices have suggested oral cephalosporins like: cefixime, cefpodoxime and some penicillins like: amoxicillin, amoxi-clav as one of the first line therapies for the management of bacterial infections. In recent 2020 study of ''Drug Utilization Evaluation'', in medicine ward of a tertiary care teaching hospital, Nepal, the usage of cephalosporin was found to be indicated highest in the respiratory system (46.04%). The use of cephalosporin in highest number in the respiratory system may be associated with their potential activity against *Streptococcus pneumoniae*, *Haemophilus influenzae* and *E.coli*. *(World Journal of Pharmacy and Pharmaceutical Sciences, 2020)*

But recent trend on the adopting preference on rising pattern of antimicrobial resistance especially in case of pandemics like: COVID-19; for superior gram+ve and gram-ve activity among specific microbs and diseases, alternative and specific cephalosporins treatment breakthrough is a major concern. This could be a sign that the market of newer cephalosporins in RTI specific like: Cefdinir to be practiced. Current market acceptance of cephalosporins, rise in microbial resistance, prevalance of bacterial penumonia cases in COVID-19 now have provide an urge for the practice of adult dose of Cefdinir 300 mg in the Nepali market.

Cefdinir; a 3rd generation cephalosporin, has benefits of superior activity and stability among specific beta lactamase resistant microbes. Cefdinir as a drug of choice against RTI, Otic and SSTI has benefits of **superior activity as compare to common penicillin and cephalosporins** against *S. pyogenes* induced URTIs, Methicillin-susceptible strains of *S. aureus* (MSSA) including β-lactamase strains in SSTIs and *E. Feacalis*. Also, Cefdinir has **superior stability against elevated rates of β-lactamases** production in *Haemophilus influenzae, Haemophilus parainfluenzae, Moraxella catarrhalis* in various RTIs. Since, Cefdinir has no clinical significant effect of food on its bioavailabilty, **it can be also be taken without regard to food**. Furthermore, Cefdinir is renally eliminated as parent drug with not significant metabolism changes, hence **no dosage adjustment is required in the population with hepatic disease**. Thus, with benefits of superiority of Cefdinir; being superior to almost all of the cephalosporins in specific pathogens and currently with the rise of bacteria resistance & RTI cases, Cefdinir could be the next specific molecule to be clinically practiced in the Nepali market.





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**Dr. Rakesh Kumar Singh**
*Medical Officer, Lahan*

**TIME Pharmaceuticals (P.) Ltd. welcomes your comments/suggestions/inputs for coming issue of this bulletin.**

**Last date of response form submission : 1st Chaitra, 2077 (14th March 2021)**

## RESPONSE FORM

Name : _____

Speciality : _____

Contact No. : _____

Birthday : _____ Anniversary Day: _____

Comments : _____

_____

Clinical Address : _____

Email Address : _____

Please send this form to:


**TIME PHARMACEUTICALS**

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E-mail: mpd@timepharma.com, Website: www.timepharma.com

# Moment in TIME


ANEMECON 2020


MINI SIMON 2020


ORTHOCON 2020

Participating on Stress Management and Positive Attitude session during lockdown


Launching of Sinex Saathi Mascot

Conducting virtual meetings during lockdown

Celebrating Pharmacist day 2020

Child artists of 'SMS: Like & Share' Video

Winner of 'SMS: Like & Share' contest

PPE Distribution at KTM

PPE Distribution at NGT

साथी !

SMS गर्दै हुनुहुन्छ नि ?


Social Distancing

M: Mask Use

S: Sanitize Hands


SINEX साथी

हाम्रै नेपालको

-facebook.com/sinexsathi

# TIME PHARMACEUTICALS (P.) Ltd.

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