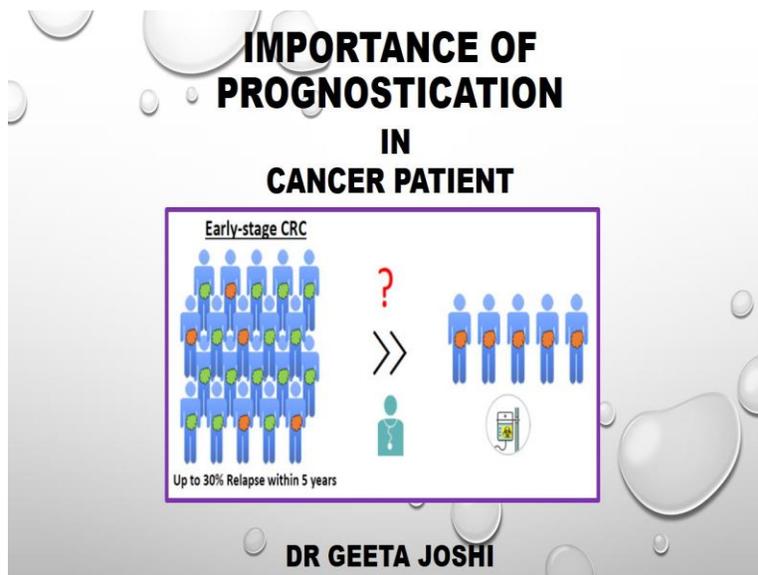


Basic Certificate in Palliative Care
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Week-10
Lecture 02: Importance of Prognostication

Week number 10, lecture number 2. Hello everyone.

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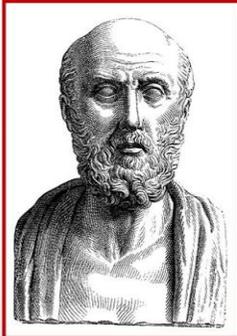
I am going to speak on importance of prognostication in cancer patient. The first slide itself, this picture shows that as per the research data available, in spite of early stage of colorectal carcinoma, 30% of the patients has relapsed of the disease within 5 years. So based on this research data, a doctor, a treating oncologist can predict that how many patients are likely to survive beyond 5 years. This is what the prognostication is.

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*It is the best thing,
in my opinion,
for the physician to apply himself
diligently to the art of foreknowing.*

—Hippocrates

Hippocrates, Father of Medicine



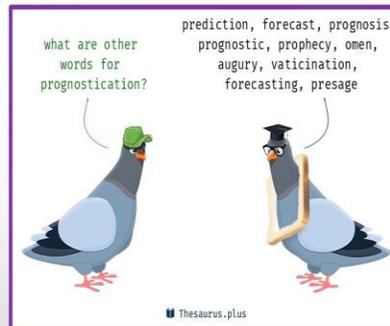
However, Hippocratic prognostication differed significantly from modern prognostication in that the prognosis was inferred directly from the symptoms without passing through the process of diagnosis.

Hippocrates has said, it is the best thing, in my opinion, for the physician to apply himself diligently to the art of foreknowing, diligently to the art of foreknowing. Whatever art we have to prognosticate, it should be used diligently, very cautiously. However, Hippocratic prognostication differs significantly from the modern prognostication in that the prognosis was inferred directly from the symptoms in Hippocratic time, prognosis was done, made directly from the symptoms without passing through the process of diagnosis and in this modern medicine, without knowing the diagnosis, we cannot prognosticate any outcome of any patient or any disease.

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What is Prognostication?

Bailey defines it as
“A reasoned forecast
concerning
the course, pattern,
progression,
duration, and end of the
disease.”



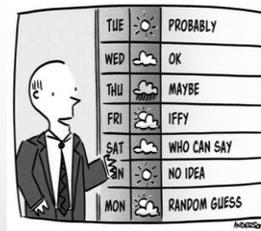
What is prognostication? Bailey defines it as a reasoned forecast concerning the course, pattern, progression, duration and end of the disease. Few other words one can use are prediction, forecast, prognosis, prognostic, prophecy, omen, etc.

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The Basis of Prognosis

An expert prediction of outcome is based upon

1. An accurate diagnosis, (External frame of reference)
2. Knowledge of the natural history of the disease, the disease's response to treatment, the progression of the disease in the patient in question.
(Internal Frame of reference)



**The Internal Frame of reference
becomes more and more important as the passage of
the time reveals the behavior of the disease**

The basis of prognosis, how you can prognosticate, there are two basis for the prediction of outcome or of a disease. One is an accurate diagnosis. This is the external frame of reference.

So external factor, which can decide about the prognosis is diagnosis of the patient, diagnosis of the disease. One factor which can decide about the outcome is the knowledge of the natural history of the disease, the disease response to treatment, the progression of the disease in the patient in question. So these are the internal factors which affects an individual patient that how the disease started in this patient, how they reacted to the disease, how they reacted to their disease reacted to the treatment given and how the disease progress in this particular factor. So by knowing these two factors, external factor and internal factor, we can decide about the prognosis of a disease. The internal frame of reference becomes more and more important as the passage of time reveals the behaviour of the disease.

See because each and every individual is different. So how a disease behaves in a particular individual will decide the internal factor and that is how that is more important for deciding of the prognosis of the disease.

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The Dimensions of the Prognosis

The prognosis is multidimensional.

- Natural prognosis
- Conditional prognoses
(e.g. Choice of Rx – Surgery Vs CT/RT
In Ca Oesophagus)
- Comprehensive prognosis

In the modern era, the perceived importance of prognosis appears to have declined

Medical
Psychological
Social
PROGNOSTICATION

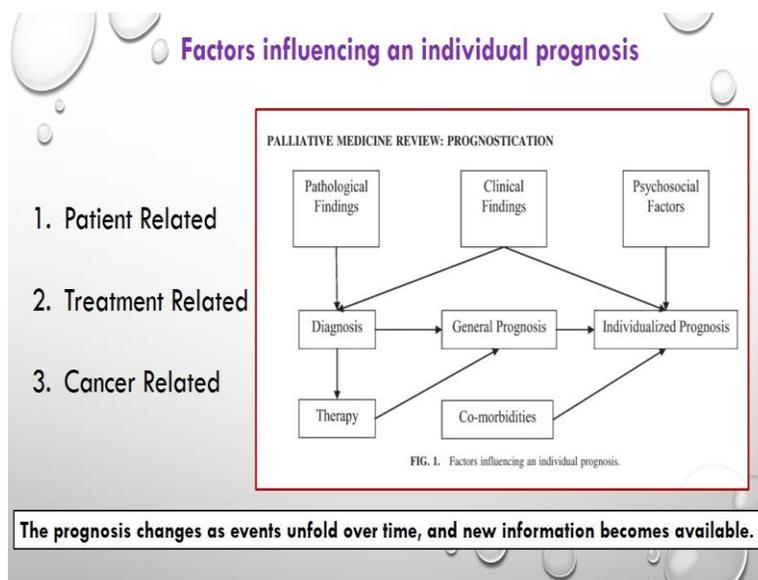
The slide features a central diagram of a human head profile with a clock face inside, surrounded by various medical and psychological symbols. The diagram is labeled with 'Medical', 'Psychological', and 'Social' dimensions. Below the diagram, the word 'PROGNOSTICATION' is written. A text box on the left contains the statement: 'In the modern era, the perceived importance of prognosis appears to have declined'. The slide is decorated with water droplets.

The dimensions of the prognosis are multidimensional. First of all, natural prognosis, how in a particular disease how naturally behaves. Second is conditional prognosis, whether the disease is treated with the surgery or with chemotherapy or chemotherapy plus radiotherapy.

So this will decide, this is another dimension of the prognosis. So that is a conditional prognosis and third is comprehensive prognosis that is many other factors deciding about the prognosis of the disease. So in modern era, the perceived importance of prognosis appears to have declined because there are so many factors which affects the prognosis of a disease. That is why nowadays the importance of prognosis is very, very limited. And prognostication itself has a medical dimension, psychological dimension and social dimension.

Medical dimension, when it is physician or oncologist view or oncologist assessment of the prognosis. Psychological dimension, how the disease has affected the psychology of the patient again that will decide about its prognosis. Coming to social dimension, how the social support is given to this particular patient and that will affect the prognosis.

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Factors which influencing the individual prognosis are patient related factors, treatment related factors and cancer related factors. So patient again it differs from one patient to another patient.

So the prognosis of a same disease in two patient. Second is treatment related factor. Even if the two patients are given same treatment, how the disease will respond, how the patient will have any complication or side effect of this treatment and how patient's body recovers out of this complication. That will decide the prognosis. Third is cancer related.

All the cancer doesn't behave similarly in all the individuals. So pathological findings may differ from one cancer to another cancer and so these are many other factors which will decide the individual prognosis. Along with that the comorbidity of a patient means associated other illness like hypertension, diabetes, cardiac event, etcetera will decide the individualized prognosis. Whatever treatment is given again it will have a general prognosis and whatever psychological factors which affects an individual that will also affect the individual prognosis. The prognosis changes as event unfolds over time and new information becomes available.

So the prognosis which is done right at the diagnosis may not be same after few months of treatment. Maybe after few months of treatment patient has developed some complication, patient might have developed some infection or patient might have developed some comorbid conditions. Like many of our cancer patient because of the decrease in immunity during the treatment of the cancer may develop certain type of infection or repeated infection.

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The Prognosis is Multidimensional

The prognosis includes, but is not limited to, the issue of life and death.
It may include any aspect of the future health or functional status of the patient

1. Will the disease end in death or recovery or will it continue indefinitely?
2. If it proves fatal, will death come quickly or slowly, and how will the patient die?
3. If the patient recovers, will some morbid condition remain either in the form of general ill health or some local problem?
4. How long will the illness last?
5. What events are likely to take place in its course, such as changes in symptoms, critical phenomena, the occurrence of complications?
6. Does having had the illness make the patient more or less susceptible to other illnesses?

- 5Ds by Fries and Ehrlich
1. Disease progression/recurrence
 2. Death
 3. Disability/discomfort
 4. Drug toxicity
 5. Dollars (costs of Rx)

"How long do I have?"

As we have discussed earlier the prognosis is multidimensional. The prognosis includes but is not limited to the issue of life and death.

Prognosis we are not supposed to do prognosis only about the life expectancy or when patient is likely to die and such thing. Prognosis many types of prognosis are necessary. Like how this patient will react to the treatment of the cancer that is one type of prognosis. Whether the patient will have recurrence after five years or not that is another prognosis. Whether this cancer will metastasize or not that is another type of prognosis.

So these are the types of prognosis one has to make. There are five Ds which has been coined by Fries and Ehrlich. First of all the prognosis first D is prognosis about disease progression and disease recurrence. Second D is prognosis about death. Third D is prognosis about disability and discomfort.

Over a period of, during the period of treatment patient may develop some form of disability. Fourth is prognosis about drug toxicity. Whether the patient will develops any toxicity to chemotherapeutic agent or not that is also one type of prognosis. And fifth is how much money will be spent in treatment dollar, cost of treatment. This is another type of prognosis.

But the most common question we faced as a palliative care physician is this particular question how long do I have? This is has been asked by many of our patients and sometimes relatives as well. Other prognosis we are asked about will the disease end in a death or recovery or will it continue indefinitely? This is commonly asked, ke Cancer theek toh hojayegana, yehi sab log poochhte rehte hain (Hindi phrase meaning Will cancer be cured? That's what everyone keeps asking.). So whether it will be cured or patient will die because of cancer or yahi treatment lambe samhe tak leni padegi (Hindi phrase meaning this same treatment will have to continue for a long time). These are all questions we are we face about prognosis of a patient. If it proves fatal will death come quickly or slowly and how will the patient die? If they feel that cancer is not curable then how the patient will die? Usko bohot takleef toh nahi hogi, poochhe toh log (Hindi phrase meaning Will he/she suffer a lot? People will ask). It will be slow death, death full of discomfort and distress or it will be a sudden death.

If the patient recovers will some morbid condition remain either in form of general ill health or some local problem? This is also asked, Ye theek hoga phir acha rahega na? Kyun, usko aur takleef rahegi? (Hindi phrase meaning It will get better, and then everything will be fine, right? Or will they still have to suffer?). How long will the illness last? Cancer treatment is a very prolonged treatment. So this is also again common question and people want to know that how long we have to undergo treatment? How long the disease will last? What events are likely to take place in the course such as change in symptoms, critical phenomena, the occurrence of the complication? People do ask what will happen now. With chemotherapy, will there be any complication with radiotherapy? Will their patient have too much of trouble or symptoms? What will happen? Will he become serious? All these type of questions are related to prognosis. Does having had the illness make the patient more or less susceptible to other illness? If patient is undergoing some surgery then relatives will ask Iski vajese aur kuch tho nahi hogana agar yeh nikaldiya ovary nikaldi tho phir patient ko aur jya kohoga bache honge ki nahi honge (Hindi phrase meaning Because of this, nothing else will happen, right? If this is removed, if the ovary is removed, then will the patient suffer more? Will they be able to have children or not?). These are the natural questions which patient wants to

know and relative also wants to know and these are all part of prognosis. So prognosis is multidimensional. It is not only about life and death.

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The Importance of Prognosis in Oncology

- ✓ The prognosis plays a central role in medical decision making,
- ✓ Valuable to patients in making decisions about aspects of their lives unrelated to their medical care.
- ✓ Providing prognostic information is a medico-legal responsibility
- ✓ Good prognostication also contributes to the efficiency of medical care
- ✓ An understanding of prognostic factors facilitates our ability to learn from clinical experience.

Other issues addressed include:

- ❖ Discharge planning
- ❖ Care planning
- ❖ Hospice referrals
- ❖ Patient/family satisfaction
- ❖ Physicians' willingness to prognosticate

High

Sudden death

Cancer

Asthma/Heart disease or Lung disease

Patient's Functional Status

Low

Time

Death

Onset of serious illness

<http://medaffix.stanford.edu>

In oncology, prognosis is very important. On right hand side figure, you can see the how, how the death occurs in various disease. In cancer, there is a sudden deterioration of the quality of life, sudden deterioration of health and patient dies. In asthma or any other lung disease, there is suddenly the health will deteriorate but patient will recover. He will be alright for few months.

Again there will be severe episode of asthma and patient's health will deteriorate for few days or few weeks and again he becomes normal and like this. So it is ups and down. Then in dementia, there is a very, very slow deterioration of the health. So these are the different patterns of health and disease outcome in different disease. So depending on the type of disease patient has, you can give prognostication or you can give proper answer to your patient.

But in oncology, prognosis plays a central role in medical decision making. It is only in cancer because cancer is interlinked with death. Cancer means cancel. Cancer means abhi khatam ho gaya abhi (Hindi phrase meaning It's over now) it is patient is likely to die.

That is what belief is. And because of that, the medical decision is very, very important as far as prognosis is concerned. Valuable to patients in making decisions about aspect of their lives unrelated to that medical care. This is important for the patient also because apart from their medical care, they have to take so many other decisions in the life when they are diagnosed with the cancer. Making prognostic information as a medical legal responsibility. It is medical legally also it is important that you should give correct information to the patient.

We will come, we will discuss this point later on in the slide. Good prognostication also contributes to the efficacy of medical care. If you are very good prognostication means suppose the cancer is in early stage likely to be cured. So, good prognostication. So, people will do proper medical, medical care is given and there will be good outcome also.

Patient also knows that I am going to get cured from this disease. So, his positive attitude and support from the family helps him survive through the cancer. An understanding of prognostic factors facilitates our ability to learn from the clinical experience. When we practice prognostication in our practice means each and every patient we try to prognosticate. Our clinical experience sharpens. Our clinical skill to prognosticate sharpens and we get very much familiar with this skill and we can practice in other patients also and slowly and slowly we reach to the 100 percent prognostic or nearly 100 percent prognostication outcome.

Other issues address include the importance of prognostication in terms of discharge planning. Usually before surgery patient or relatives wants to know, kitne din hospital mein Raina padega (Hindi phrase meaning How many days will one have to stay in the hospital?). This is also one of the prognostication. Like the surgery may be minor, patient like breast surgery and patient will have to stay in hospital at the most 48 hours.

But suppose some complication occurs or patient is having comorbid condition like diabetes and wound does not heal or there is a decision of the wound and also thing can happen and the discharge planning will be delayed. So here before any hospitalization prognostication is important because it will, it is important for the discharge planning. Second is care planning. Caregiver also has to plan that how many days I have to stay

with the patient in hospital or how many days the patient will be requiring care at home also. Hospice referral, when the disease cancer is advanced and there is a metastasis, there is a patient is likely to go for hospice referral, then prognostication is important then when patient should be referred to hospice for terminal care.

Prognostication is sometimes important only for patient and family satisfaction. Jab shuru mein bol dete ke kya hai, do din rehna padega, surgery ke baad aap ghar jaoge (Hindi phrase meaning when they tell in the beginning what it is, that you'll have to stay for two days, and after the surgery, you can go home) and within 8 days you can join your duty. Patient and family both are happy as they plan their things accordingly. But there should always be physician's willingness to prognosticate. Many physician avoid that question, then prognostication is not possible.

Many physician will say, dekhte hain, kya kaisa rehta hai, operation ke baad kaisi tabiyat rehti hai (Hindi phrase meaning let's see how things go, how the condition is, and how the health remains after the operation), then we will let you know when to go. So in that case, planning on the side of caregiver, patient is difficult and even hospital cannot decide that how for how many days this bed will be occupied.

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Medical Decision Making

The decision to treat is always based on the comparison of at least two conditional prognoses, "The prognosis without treatment and the prognosis with treatment"

- ✓ Doctors often made these decisions on behalf of the patient
- ✓ Medical ethics emphasizes the patient's right to self-determination,
- ✓ Doctors helps patients in decision making



Whereas scientific knowledge is generalized and impersonal, medical practice takes place under conditions, which are singular, individual, and irreversible.

—Weissman, Theoretical Medicine and Bioethics

Medical decision making, the decision to treat is always based on the comparison of at least two conditional prognosis, the prognosis without treatment and the prognosis with treatment. Particularly in Cancer, many a times, patient has myths about certain type of treatment like chemotherapy. Patient doesn't want to take chemotherapy, usme baal nikal jaate hain, bohot khana peena band ho jaata hai, vagaira karke (Hindi phrase meaning it causes hair loss, a significant loss of appetite, and other such issues).

No, no doctor, I don't want chemotherapy, you give me, you can do surgery on me. Many times, patient refuses for radiotherapy, no usme badan jal jaata hai, vagare hai (Hindi phrase meaning it causes burns on the body and other such issues). Some myth they have heard from some friends or family members. So again the prognosis will change, it will depend on whether patient agrees for the treatment or doesn't agree for treatment. But we always has to respect patient's autonomy.

So advice of a doctor and patient's autonomy needs to be balanced because patient will say just let me make my own decision. Many a times, doctors often made these decision on behalf of patient. Doctor, yeh bol dete hain, bas chemotherapy leni padegi, yeh karna padega (Hindi phrase meaning you just have to take chemotherapy, you have to do this), you will be alright. This is the way usually oncologists talk. But our medical ethics emphasizes the patient's right of self-determination, decision making.

You have to give the patient choice that aapko chemotherapy leni padegi, ya toh agar nahi lena chahte hain toh phir ye karna padega (Hindi phrase meaning either they have to take chemotherapy, or if they don't want to, then they will have to opt for an alternative treatment.). Aisa (Hindi word meaning like that), we have to explain the pros and cons of any treatment you are offering to the patient. The best thing is doctors helps patients in decision making. Patient might have many doubts, many myths against a particular treatment. It is doctor has to find out why patient is behaving like this.

Suppose patient says, no, no, no, I don't want chemotherapy because usme (Hindi word meaning in that) both nausea vomiting hoti hain, khana bandh hojatha hain (Hindi phrase meaning because it causes a lot of nausea and vomiting, and I lose my appetite). So doctor has to explain that now there are so many medicine available to treat your nausea

vomiting or chemotherapy drugs are also better quality. So you will not be suffering because of nausea vomiting or if you don't take such things will happen. So each and everything clear picture, clear and truth to be told to the patient, to be discussed with the patient and relative and patient and relative should be given enough time to think over it. This is how the doctor can help patient in decision making.

Whereas scientific knowledge is generalized and impersonal. Medical practice takes place under conditions which are singular, individual and irreversible. In general, such and such a patient should be given chemotherapy. But when it comes to a patient who is sitting in front of you as a medical practitioner, you have to judge everything under these particular circumstances for this particular individual and help them to take decision. That is what medical decision making is.

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A Case Scenario: Medical Decision Making

62 Yrs, Mr K, diagnosed with Ca Head of Pancreas, Locally advanced
Co-Morbidity: Interstitial Lung Disease, DM,
ECOG: 02
Other situation: COVID pandemic at peak

**Medical Decision : To give chemotherapy
1st Cycle given**

Patient developed -- Severe Mucositis -- Breathlessness -- Anorexia -- Home bound Admitted to Hospital for a week Rxed with IV fluids & Symptom mx & O2 Shifted to home with O2	Developed Severe Dyspnea Taken to Hospital Tested +Ve for COVID Respiratory Failure High S Cr & Blood urea ICU Admission Dialysis No Palliative Care Ref No Communication No EOLC	Justification???? ✓ Family Members ✓ Oncologist ✓ Hospital Policy
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Here we are going to discuss a case scenario about the medical decision making. A 62 years old Mr. K diagnosed with cancer of head of the pancreas which was locally advanced means it was spread to the surrounding.

Mr. K also has interstitial lung disease and diabetes. Interstitial lung disease because of that his oxygen saturation falls anytime he becomes breathless and all. His ECOG score

means performance score is 2 means he is able to do his routine work and more than 50 percent of the time he is up and about and is moving around. When patient was diagnosed with this cancer that time the situation was COVID pandemic at peak. Now patient is having cancer of pancreas which is locally advanced. So locally advanced cancer is not resectable cannot be operated upon.

So medical decision was to give the patient chemotherapy and first cycle of chemotherapy was given. Following chemotherapy Mr. K developed severe mucositis inflammation in the mouth, breathlessness, anorexia and he became homebound. He was admitted in the hospital for acute management of the acute symptoms for a week. He received IV fluids and symptom management and oxygen was given because since he was a patient of interstitial lung disease.

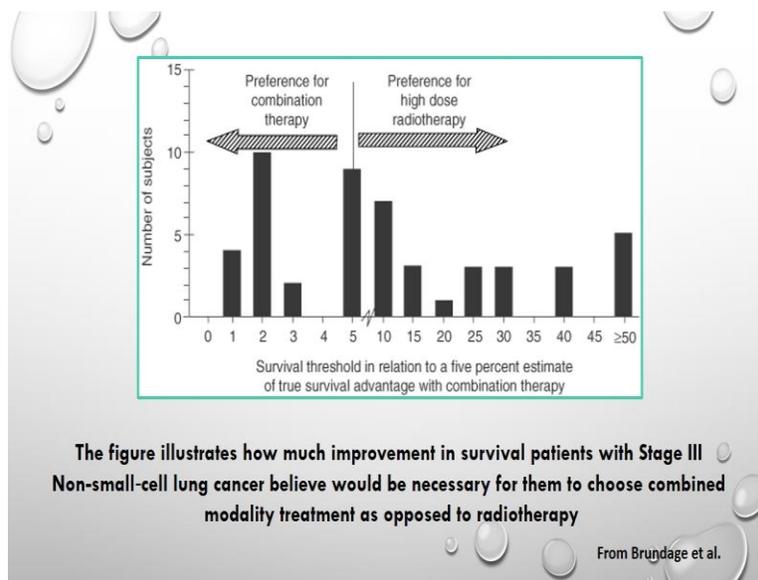
After one week patient was shifted to home with oxygen. Again after few days Mr. K developed severe dyspnea. He became breathless. Again he was taken to hospital. This time he was tested COVID positive and he went into respiratory failure.

He was not able to maintain his oxygen with normal breath. His creatinine was high, kidney failure was evident and he was admitted in ICU and was put on dialysis. He was not referred to palliative care physician for end of life care or about the management of the symptoms or about communication about the stage of the disease and all. No communication, no end of life care. So how do you justify this patient? This situation. Was it a right decision to give chemotherapy to a patient with so much, so many comorbidity and that too when the COVID is very pandemic at peak.

So following chemotherapy his immunity is likely to fall, go down and he is likely to get COVID. Was it discussed with the family members about the various treatment option? What was the, which other oncologists were consulted? What was the decision on part of surgical oncologist or radiation oncologist? What was the hospital policy that during COVID pandemic you should give palliative care chemotherapy or not? What is the hospital policy that when patient's cancer is advanced when to refer to the palliative care physician?

So, all these questions comes to the mind when such a patient is treated in hospital. So here the prognostication plays the role that a cancer patient with advanced stage of the disease with many comorbid condition and that too in presence of COVID pandemic should be given chemotherapy or not? And with chemotherapy what will be the prognosis and without chemotherapy what will be the prognosis? This is how the prognosis will is important in certain situation.

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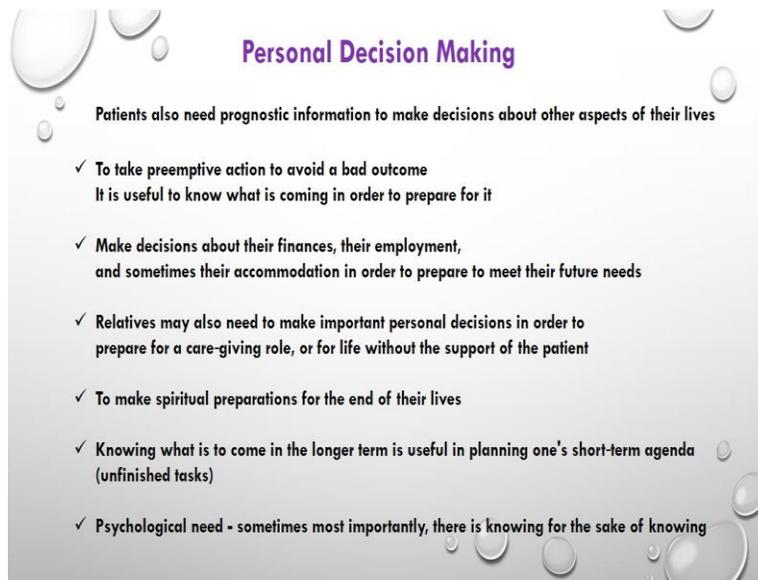


This figure illustrates how much improvement in survival patient with stage 3 non-small cell lung cancer believe would be necessary for them to choose combined modality treatment as offered through radio radiation oncologist, radiotherapy. Stage 3 non-small cell lung cancer can be treated with combination of therapy that is radiotherapy plus chemotherapy or it also can be treated only by radiotherapy.

Now literature says if the patient receives radiotherapy only they can survive five patients can survive up to 10 years, 8 years, 10 patient can survive up to and small number of patient can survive up to 3 to 4 years. But if they receive only combination of radiotherapy and chemotherapy only few patient can survive up to 3 years and 4 per years and few small number group of patient can survive up to 10 years. So depending on this patient, so if patient is taking only radiotherapy he can be given prognosis like this or if

his combination it can be a prognosis will differ. So the prognosis of a disease differs depending on the type of treatment patient receives.

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Personal Decision Making

Patients also need prognostic information to make decisions about other aspects of their lives

- ✓ To take preemptive action to avoid a bad outcome
It is useful to know what is coming in order to prepare for it
- ✓ Make decisions about their finances, their employment, and sometimes their accommodation in order to prepare to meet their future needs
- ✓ Relatives may also need to make important personal decisions in order to prepare for a care-giving role, or for life without the support of the patient
- ✓ To make spiritual preparations for the end of their lives
- ✓ Knowing what is to come in the longer term is useful in planning one's short-term agenda (unfinished tasks)
- ✓ Psychological need - sometimes most importantly, there is knowing for the sake of knowing

Prognosis is very very important for personal decision making. Patient also need prognostic information to make decisions about other aspect of their life. To take preemptive action to avoid a bad outcome it is useful to know what is coming in or in order to prepare for it. So if patient is told right at the after few months of treatment that your cancer is not responding to chemotherapy you are likely to have progression of the disease. So if it is told they will be prepared for it right that now he will be facing advanced stage of cancer he will have to live with it he will be having so many symptoms and all and frequently he will have to go to hospital so he should be prepared for it.

Make decision about their finances and their employment. Shuru mein toh medical leave rakhte hain (Hindi phrase meaning In the beginning, they take medical leave) but when so in the right in the beginning if you know the prognosis that this patient will need treatment for 2 months, 3 months and after that he will be alright he can join the duty then it is okay. But sometimes this picture is not clear so he does not know whether to continue with the job or resign the job and all that and sometimes their accommodation in order to prepare to meet their future needs. Sometimes patients are staying very far off

from the treatment center particularly tertiary care center in city and patient is staying in rural area. Suppose he is affording affluent patient for treatment purpose he buys a house in city to undergo treatment in tertiary cancer center but after few months also if he is not getting cured his treatment prolongs and not proper the prognosis is done he is confused about his accommodation where he should stay and where he should be cared for.

So this type of decision also depends on the prognosis. Relatives may also need to make important personal decision in order to prepare for a caregiving role. As I said if suppose caregiver is also having a job. Woh bhi chhutti lekar unke saath rehte hain thode din (Hindi phrase meaning they also take leave and stay with them for a few days.). But for how long here the role of prognosis comes into the picture or for life without the support of the patient. At one stage this particularly happens in young patients who are having small children and wife is caregiver along with the patient who is having now cancer is progressing. So she is totally in dilemma that how long he is going to live. She has kept her children with her relatives with her brother's place or something this we commonly see in our setup and children are missing school for over many months.

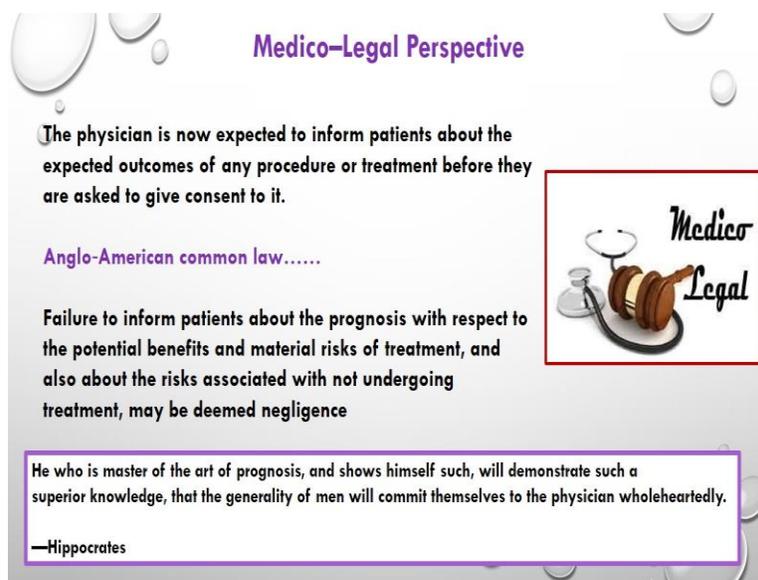
So she is now constantly she wants to know that how many days he has how long he is going to live when I will get back my children and when they will start going to school and also thing. So this here the again prognosis is important.

To make spiritual preparation for the end of life many people has got some planning to visit some Dharmasthal or Yatra ka sthal jaana hai, wahan ja ke prayer offer karna hai, yeh sab decision bhi uspe depend karte hain (Hindi phrase meaning one has to go to a religious place or a pilgrimage site, one has to go there and offer prayers, all these decisions also depend on them). One of our patient wanted to go for some Yatra and he was very very sick he was in advanced stage of cancer. Nobody had told him that he is suffering from advanced stage of cancer he was young. So he when he was brought to hospice on within a week's time he told me that when I will get discharged. I said why you are asking that he said I want to go to that Yatra stall you know I said how far it is so he said it is seven eight hours journey I said you cannot do that journey he said why not once you treat me over and I become alright I will go then we have to explain to him that

such thing will not happen and we have to explain to the relatives her his parents so then we convince him that instead of you your parents will go and visit that Yatra stall and they will bring prasad (hindi word meaning holy offering) for you. So this is how the prognosis plays important role so he was satisfied he was he was convinced. So he and then he was at ease before his death.

Knowing what is to come in the longer term is useful in planning one short term agenda, immediate unfinished task many patient has to sign some documents and some property related deals and also thing. So prognosis is very important for that. Psychological needs, sometimes mostly most importantly there is there is knowing for sake of knowing some distance relative will come and ask us. Madam how long he is going to live. So, we first of all we will ask are you related to him what is your relation, why you want to know. So, this is sometimes happens and here it is not necessary to convey the prognosis of patient to anyone and everyone.

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Medico-Legal Perspective

The physician is now expected to inform patients about the expected outcomes of any procedure or treatment before they are asked to give consent to it.

Anglo-American common law.....

Failure to inform patients about the prognosis with respect to the potential benefits and material risks of treatment, and also about the risks associated with not undergoing treatment, may be deemed negligence



He who is master of the art of prognosis, and shows himself such, will demonstrate such a superior knowledge, that the generality of men will commit themselves to the physician wholeheartedly.

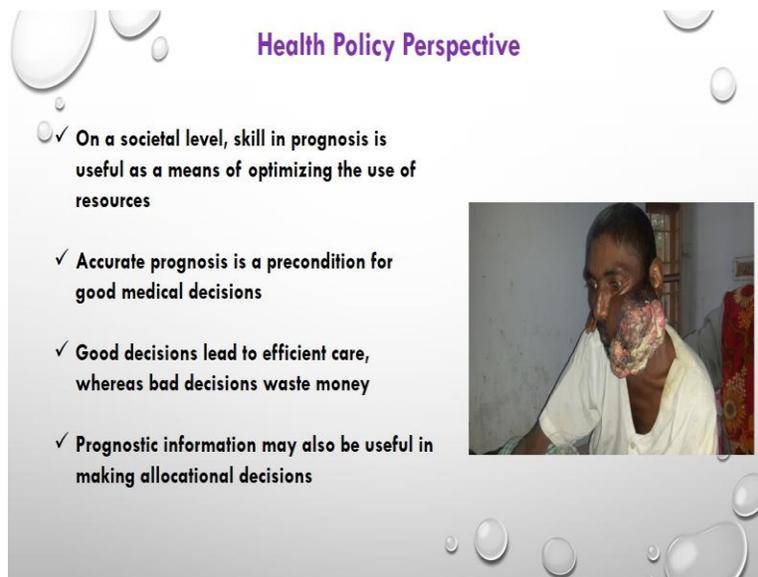
—Hippocrates

Medico-legal perspective, the physician is now expected to inform patients about the expected outcomes of any procedure or treatment before they are asked to give consent to it. Here, again prognosis comes into the picture whenever we are taking consent for the surgery that suppose your limb will be cut off, your body part will be removed. That time

we are supposed to know this is a medical legal perspective consent once we take up the patient for surgery particularly in cancer patient sometimes on the way we find that this tumor is inoperable. So, in advance we have to do prognosis that this tumor may become in may be inoperable and we have to take consent accordingly.

So, Anglo-American common law says failure to inform patients about the prognosis with respect to the potential benefits and material risk of treatment and also about the risk associated with not undergoing treatment may be deemed negligence if you cannot say this to your patient it is a medical ignorance and medical legal problem. So he who is master of the art of prognosis and shows himself such will demonstrate such a superior knowledge that the generality of man will commit themselves to the physician wholeheartedly so the doctors who can predict very surely they are really appreciated by patients and their colleagues.

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Health Policy Perspective

- ✓ On a societal level, skill in prognosis is useful as a means of optimizing the use of resources
- ✓ Accurate prognosis is a precondition for good medical decisions
- ✓ Good decisions lead to efficient care, whereas bad decisions waste money
- ✓ Prognostic information may also be useful in making allocational decisions



Regarding health policy also prognosis is important usually there are very few policies as far as cancer is concerned but in that also they ask for so much of details and where medical practitioner has to use that art of prognosis.

On a societal level, skill in prognosis is useful as a means of optimizing the use of resources. Like in cancer patient, we know that this particular very very costly chemotherapy should not need not be used for this advanced stage of cancer patient but it can be used for the curable cancer. So, we can we cannot waste such chemotherapy for a person cancer which is not curable. So, with available resources also you have to use your prognosis skill and use the resources accordingly.

Accurate prognosis is a precondition for good medical decisions. Good decisions lead to efficient care whereas bad decision waste of money. Like terminal advanced stage cancer patient admitted in ICU and put on ventilator for 3-4 days it is a waste of money and waste of hospital resources. So, here the efficient prognostication comes into the picture and good end of life care will save all this hospital resources and save patient and relative from undergoing all the trouble to get admitted in ICU. Prognostic information may also be useful in making allocation decision so accordingly you can allocate the resources to the available resources.

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The Research Perspective

In cancer research, an understanding of prognostic factors is important in the design and analysis of clinical trials and retrospective reviews of clinical experience.

Prognostic factors are used as eligibility criteria to ensure a relatively uniform study population may also be used in the process of stratification that is undertaken to balance the case mix in each arm as far as possible

The slide features a word cloud on the right side with the following terms: Comparison, Participants, Safety, Behavioral, New, Studies, Devices, Scientific, Institutional, Human, Verifying, Approval, Government, Costly, Data, Biomedical, Medical, Results, Prospective, Stages, Monitoring, Outsourced, Benefits, Vaccines, Treatments, Drugs, and Factors. The words are arranged in a circular pattern around the central text 'CLINICAL TRIALS'.

Research perspective, prognostication has got a research perspective as well. Suppose you have taken up a clinical trial and in clinical trial very newly found drugs are used and they are given to the patients. If during the selection of the candidate if you do not know

exact about the prognosis you may select a patient who is not having good prognostication and this patient will drop out in the middle of the trial and all your money will be wasted. So in cancer research and understanding of the prognostic factors is important in the design and analysis of clinical trials and retrospective reviews of the clinical experience. So, clinical experience also based on the same type of patients treated with same type of treatment and had a same type of prognosis.

So, prognostication also here also it comes into the picture. Prognostic factors are used as a eligibility criteria to ensure a relatively uniform study population may also be used in the process of stratification that is undertaken to balance the case mix in each arm as far as possible. So here also again prognostication has got a importance.

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The Accuracy of Prognostic Judgments

Although there is a very extensive literature about prognostic factors in cancer, there have been very few reports relating to the accuracy of prognostic judgments in practice in individual cases.

<ul style="list-style-type: none"> • Performance status (ECOG, KPS, PPS) • Delirium • Dyspnea • Cachexia-anorexia-dysphagia 	<ul style="list-style-type: none"> • Leukocytosis • Lymphocytopenia • Hypoalbuminemia • Elevated lactate dehydrogenase (LDH) • Elevated C-reactive protein (CRP) 	<ul style="list-style-type: none"> Palliative Performance Scale (PPS) Palliative Prognostic Score (PaP) (Most validated) Palliative Prognostic Index (PPI) Momentum of Functional Decline
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When we can prognosticate with certainty, medicine will have become a science.

—H. Hartshorne *A system of medicine*

The accuracy of prognostic judgments although there is very extensive literature about the prognostic factors in cancer. There are so many factors play a role in prognostication. There have been very few reports relating to the accuracy of prognostic judgment in practice in individual cases but still because of so many factors plays a role it is very

difficult to judge. But, they still we have certain tools design or perform design to help you coming to the judgment of a prognostication.

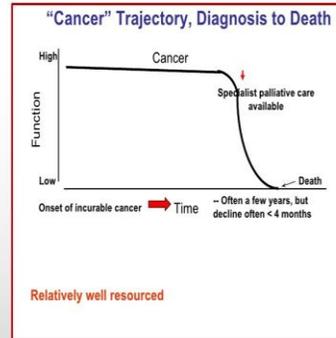
Whether patients performance status, how is the performance status? There are tools to define the performance status of the patient and performance status of the patient will decide the prognosis. The person who is almost always bedridden cannot get up from the bed he's got poor prognosis compared to the person who is mobile, ambulatory, doing his routine work etcetera. Whether patient is having delirium or not, whether patient is having dyspnea or not, whether patient is having cancer related, cachexia, anorexia, dysphagia or not, whether patient is having glucocytosis, lymphocytopenia, Hypoalbuminemia protein level is very low, whether patient's LDH is very high or patient's elevated C-reacted protein is very high. Then there are scales like palliative performance scale, palliative prognostic scale and this is the only scale which is more validated, more effective and palliative prognostic index and momentum of functional decline. How the patient's function deteriorates, how speedily it deteriorates will decide the prognosis.

When we can prognosticate with certainty, medicine will have become a science. So prognostication is a science, you have to learn the clinical part of it, the research part of it and of course psychology of the patient as well as social support of the patient.

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Some Facts about Prognostication

- ✓ Clinical prediction of survival has been found to be erroneous. So always use tools....
- ✓ Pain has not been associated with length of survival
- ✓ Treatment with opioid analgesics has not been found to impact length of survival
- ✓ Functional decline is reversible or irreversible
- ✓ Observation over a period of time will provide a sense of the momentum of functional decline
- ✓ Team based prognostication
- ✓ Review your methods often



Some facts about prognostication, clinical prediction of survival has been found to be erroneous, so always use tools. Whenever you want to prognosticate, use tools, whichever you know. We in previous slide, we discussed these tools and we should make use of these tools, all this.

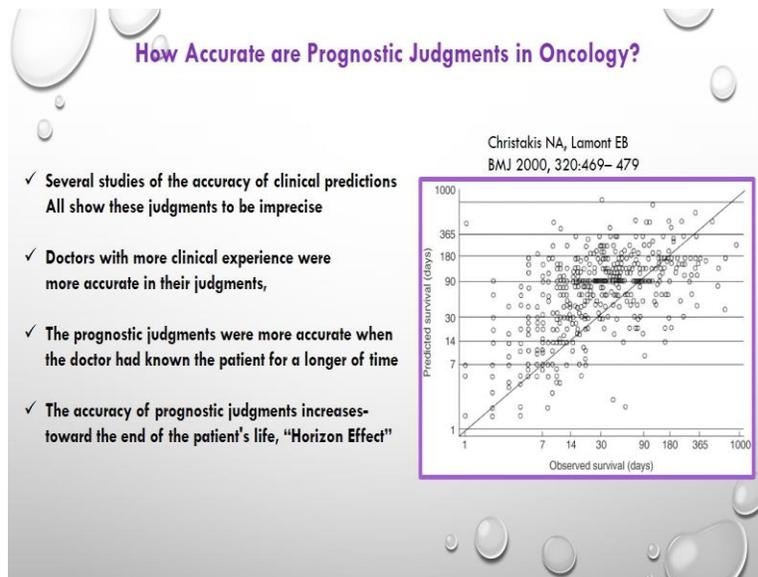
Pain has not been associated with length of survival. If patient has severe pain, it does not mean he is going to die immediately. So don't consider that symptom as a prognostication, helping you in prognostication. Treatment with opioid analgesics has not been found to impact on length of survival. Again patient on morphine doesn't mean that he is going to die soon.

Functional decline is reversible or irreversible. Sometimes functional decline is reversible, particularly in young patient. Because he had severe diarrhea for few days, he will become bed bound, but if you treat this diarrhea, he may become again ambulatory and he will be able to do, his function will improve. So whether the cause of this functional decline is reversible or irreversible, that you have to find out. Observation over a period of time will provide a sense of momentum of functional decline. So you have to, before doing prognosis, you have to observe the patient over a period of time.

You have to keep all these factors of prognostication in mind during each visit of your patient and decide now, this may keep on changing during each visit. Team based

prognostication, keep the treating oncologist, medical oncologist or radiation oncologist in loop when you are making decision about prognostication and review your method often. So this is the ongoing process in career of physician that he keeps on reviewing his process, keeps on learning something new and keeps on adding to his experience to make a perfect prognostication.

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How accurate are prognostic judgments in oncology? Several studies of the accuracy of clinical predictors and all show these judgments to be imprecise. Many research has been done for mostly it is not precise. Doctors with more clinical experience were more accurate in their judgment. So doctors who practice prognostication in the day to day practice, they are more accurate in their judgment. The prognostic judgments were more accurate when the doctor had known the patient for a longer time. He has to follow up the patient throughout the disease trajectory. The accuracy of prognostic judgment increases towards the end of patient's life that is called horizon effect.

So patient when patient becomes terminal your prognostication definitely becomes more accurate.

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Limitations to the Accuracy of Prognosis

In Oncology, it is unlikely that course of the illness is completely determined at the time of diagnosis

- ✓ Genetic plasticity is a characteristic of neoplasia
- ✓ Random mutation and natural selection
- ✓ It is not possible to predict when a metastatic, or drug-resistant, clone will develop
- ✓ Impossible to predict whether a given dose of chemotherapy or radiotherapy will be effective
- ✓ Molecular basis of these differences in radiocurability
- ✓ 50% tumor control dose (TCD50) – “Scratch & Win” situation



Limitations in oncology it is unlikely that course of illness is completely determined in the time. So right at the diagnosis you cannot say about the course of the disease because there are so many factors will decide the course of the disease. One is genetic factor, second is random mutation and natural selection. It is not possible to predict when a metastatic or a drug resistant clone is there. Sometimes during the course of treatment the cancer characteristics changes and it becomes metastatic suddenly or becomes resistance to the chemotherapy.

So you again your prognosis will change. It is not possible to predict whether a given dose of chemotherapy or radiotherapy will be effective. Some one patient may be fine with 100 milligram dose of chemotherapy and another patient may not respond to it. Molecular base of this difference is in a radiocurability and 50% tumor control dose, the dose required to kill the 50% of the tumor varies from patient to patient. So there are so many limitations to the accuracy of the prognosis.

The good old method of prognostication seeing the palmistry still prevalent in our society. Thank you very much.