Probiotics in the Safeguard and Care of CRC

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Introduction

In the human 100 trillion m.o. are present that are very important of G.I homeostatis. In this one thing is to Improve the immune system of the intestine, changes the absorption of food by intestinal microbiota, and infection resistance by host and host metabolism regulation. (Nicholson et al., 2012)

According to FAOUN and WHO appropriate dose of probiotics very useful for humans. Microorganism depend on factor such as age, diet, stress, drug, life style, intestinal lumen. (Saavedra, 2007).

Colorectal epithelium have own structure and function with the immune system keep a good interaction between host and microbiota. Probiotics have very high antioxidants and immunomodulatory.

If any changes in M.O they are affected by IBD, asthma, mental disorder, CRC, obesity e.t.c. protein fermentation is completed one of the part that is distal region with the presence of toxic metabolites that obtain from protein metabolites such as indole, phenol, ammonia, sulfur compounds.

It is a live M.O which are very helpful for our healthy gut are well known functional food and it is used as to improve and restore dysbiosis and GIT disease.

Probiotics regulate the structure of gut micro flora and after gut barrier function. Probiotics used as a food additives with benficial effects on the healthy body with the help by setting microbial balance in GIT.

Lactic acid bacteria is used as a protective culture and LAB is a normal probiotics organism. Mainly genera of LAB are leuconostoc, enterococcus, lactobacillus, bifidobacterium, pediococcus, and streptococcus.

Probiotics also prevent the some disorder such as lactose malabsorption, irritable bowel syndrome, acute diarrhea and inflammatory bowel disease. (Belkaid & Hand, 2014)

Probiotics comes from the greek word

Pro=for

Bios= life

The relation of both intestinal microflora and the host are so specific if any changes in organism that changes can be occur a disease.

The major manifestation of enteric infection is diarrhea. Then discovery the some M.O that are capable to protecting the GIT from dangerous bacteria.

A male person parker do one thing that is specially design probiotics to improve animal feed supplements. Probiotics mechanism which prevent GIT disturbances.

They both are present live in human digestive system.it is help to separation of sugar and lactic acid production.

Antioxidants produced from Lactobacillus and some antioxidants are following super oxide dismutase, glutathione or catalase decrease the tumor size and inflammation.

Probiotic have many different varities in the market such capsules, powder, tablets, sprays, liquid suspension.(Fuller et al 1989)(Fuller et al,1991)(Fuller 1992)

Important characteristics for probiotics are:-

- Probiotics is act like to adhere on the human cells
- Probiotics improve the gastric acid and bile stability
- Probiotics also produced or we can say production of antimicrobial substances
- Probiotics have important role it works against the bacteria like pathogenic

bacteria.(Metchnikoff et al)(Mackowiak et al)

Pdf (2) Probiotic effects:-

Many advantages in the ingestion of probiotics have been seen and they are given below;-

1] **Lactose malabsorption:-**

When lactose malabsorption is increased by insufficient amount of lactase in the human gut that will causes abdominal distension, excessive flatulence and diarrhea.

In human gut lactose malabsorprtion is increased in short supply of lactase in the human that will be suffering from diarrhea, abdominal distension, excessive flatulence.

Lactose unable to utilize over the half of the population effectively. We can administered lactose in to the yoghurt that will be more useful and have more effective against same dose given in untreated milk.We can improves tolerance to lactose with help of galactosidase.

2] **Intestinal infections:-**

3] Suppression of cancer:-

For Conducting Epidemiological study have concern that increase in the consumption of saturated fats may cause colon cancer.

Types of probiotics:-

There are many type of bacteria are classified as probiotics. They also have different different advantages but most common from two groups.

- **Lactobacillus**
- **Bifidobacterium**

Lactobacillus:- lactobacillus present in to the yoghurt and other brew foods and it also a very common probiotics. Many strains are responsible for treatment of diarrhea and in this condition digestion of sugar in milk and lactose is not digested.

Bifidobacterium: It is present in Milk related product. It is helped in treatment of IBD and other condition.

Colon rectal cancer :- (CRC)

CRC also have another from of chromosomal instability and it is 4th cause of cancer and most common cancer in the world.

It is a complex disease that is build up like obesity, low physical activity, high fat BMI, high BMI, Smoking low fiber diet, alcohol consumption, etc.

Major treatment for the CRC is the only surgery but some possibility can occurs such as Alteration of normal intestinal flora, function of intestinal mucosal barrier is diminished and enhanced systemic inflammation and immune function id decreased.(Portune et al., 2016).)

Molecular pathway of CRC:-

The main type of CRC is chromosomal instability (CIN). The pathogenic mechanism consists of three path way that are called CIN.

- Chromosomal instability(CIN)
- Microsatellite instability(MSI)
- CPG island methylation(CIMP)
- CIN: - It is divided into classic pathway that is called CIN. In this 80 to 85 percentage peoples are suffered from this CRC. In this pathway same changes will occurs like telomaric disorder, separation in chromosomes(DNA and RNA) and DNA damage response these effects on basic genes that is responsible for controlling the function of cell like as K-ras, phosphoinositide 3-kinase (PI3K), adenomatous polyposis coli (APC and TP53 with other genes). For the APC mutation initiation in the nucleus catenin is transferred and changing in the invasive gene and tumorigenic, while alteration in the PI3K and K-ras then activated mitogen and protein (MAP) is activated and cell proliferation happened(McMillan et al).
- MSI:-This pathway is highly mutable phenotypic type pathway. In this mechanism loss of DNA repairing. In MSI decreses the short DNA sequence repairing (2-5 repeats) in case of tumors. So changes in the areas accumulates. Accumulation can affect coding microstructure as well as noncoding regions. Due to this inactivation of tumor suppression gene or activation of oncogene and result is formation of tumor.MSI having mutant gene included MLH1, MSH2, MSH6 ,PMS2.
- CIMP:-In MSI epigenetic changes and form CPG.CPG is methylated phenotypic and that combined and colorectal cancer happened. Main advantages of this CIMP is hyper methylation of promoters of oncogene. And due to this decreases of

the gene expression sand gene silencing. In the CRC genetic and epigenetic are not unique. Both are corporate on its development.(Xu et al)

Connection of Microbiome in different environment

- Connection between Microorganism environment and G.I health
- Connection between Microorganism and the Growth of CRC
- **Connection between M.O environment and G.I health:-** all we know the M.O of the stomach have play a most important role for G.i health and there function and other changes of the M.O by using probiotics so we can see more beneficial effects.

Commensal M.O means M.O have relationship with other M.O that called commensal M.O. commensal M.O show the mechanism that decrease the inflammation and also decrease risk CRC.

Now combat pathogenic bacteria is prevent from pathogen and toxin for adherence to the epethilial layer of intestinal. Combat pathogen bacteria have advantages there are as following

- Regulate immune responses
- Balance signaling pathways
- Regulate intestinal epithelial homeostasis by increasing intestinal epithelial call survival.
- Increasing barrier function
- Initiate cell protective responses

By clinically probiotics have more benefits in diseases:-

- Infection diarrhea
- Chronic constipation
- Pouchitis (inflammation in pouch of intestine)

Some studies have been less with methodological limitations. Due to some differences of probiotics doses and biological activity between many commercial probiotics preparations the result from any given studies cannot be applied to all probiotics substances.

Now probiotics have potential benefits and anti-inflammatory properties that is one of the reason of probiotics may also have more beneficial effect in the prevention and treatment of cancer and or cancer therapies. (Walia et al)(Van et al)

In the gut microenvironment commensal bacteria:-

- **Connection between Microorganism and the Growth of CRC**:- for new research based study formulation of microbiome in the patient body which causes CRC in patient body which is totally different microbiome of patient, in recent research in japan in which determined the M.O genome with the help of terminal restriction division the length is polymorphism and next generation pattern were determined and analysed that the result is various bacterial genera ex- Haemophilus, fusobacterium, actinomyces and individual bacteria species such as S.gordonii, bacteroides fragilis which formulated in patient body which is known as Colorectal carcinoma but it is developed without control of disease for conducted another study when we compared the microbiota close to tumor tissue in this the result is not show difference but in case when the microbiota close to normal mucosa in patient for this the microbiome not convertedsecondary to neoplasia but in CRC microbiota is presented in initial stage of carcinogenesis. When any changes in dysbiosis (insufficient and increase absorption of microbiota which affect the pathway and tumorigenesis is caused when dysbiosis happened so homeostasis is disturbed of immune system and mucosal barrier in GIT.(Gagniere et al)(Chen et al)(Baxter et al). Inflamation happened result is mucosal barrier permeability is increases and inflammation is continuous. Through this process cytokine and the growth factor ex- TNF-b, Tnf, IL-6, VEGF is stimulated and their induction lead to the growth and dysplastic cell survival dysbiosis combined with bacterial biofilm formation which increases bile acid metabolism, proliferation by Toll like receptors this mechanism caused to malignant transformation. Research conducted between two types of bacteria ex- bacteroides fragilis and fusobacterium nucleaatum which provide a model when some changes in the microbiome can added to tumorigenesis. In 2009 survey the study

conducted ETBF ex- enterotoxigenic B.fragilis and due to this acute inflammatory diarrhea is caused 20-35% colony of adult. Two study is done in ETBF and non toxigenic b,fragilis which colonized multiple intestinal neolplasia chronically in the mice but the EBTF was responsible for colitis and colonic tumor is induced. The ETBF activated and signal transducer and transcription -3 is stimulated in the colon which increases. The colitis with the help of t-helper type 17 immune response. Antibody block IL-17 and IL-23 (receptor) to TH 17 response then inhibition of ETBF induced colitis colonic then colonic hyperplasia and formation of tumor. F.mucleatum was over represented in genetic determination of CR tissues in two different study in 2012.

First study in the species was connect to appendicitis and periodontitis but not seen in cancer which having pro-inflammaotry response initially it is not seen in cancer which is known as F.nucletum did,in fact CRC tumorigenisis and their combination is activation of tumor cell growth by the stimulation of b-catenin signaling and induction of oncogene expression by FadA adhesive virulence(virus)factor.

For Further study it is a evidence that dysbiosis and development of malignancy is not correlated.In 2013 study in Non-tumor bearing mice have different microbiome then tumor bearing mice. In tumor free mice which increses tumorgenesis the gut microbiota is introduced which allow germfree mice comparison to mice which is colonized with tumor free mice.Any changes in the gut microbiota which result in decreses the size of tumor.In another study in 2015 the conclusion is same i.e the isogenetically mice in specific environmental condition which is suitable to CRC depending on Intestinal microflora profile.

Relationship between the Microbiome and treatment of Cancer and their Effectiveness

In the cancer treatment major challenges is response .In some patient same cancer treatment is respond and other patient which having same epidemiological and clinical characteristic and not given response. For recent study and reserch is relised that patient microbiome is not important part of patient life and treatment of cancer. In the recent in vitro type of study which suggested that the cancer treatment drug exposed (5-fl Uracil) which resist CRC to the Lactobacillus Plantarum which also inhibited the Cancer-specific markers such as CD44,133,166 and ALDH1.If the combination of 5-fU and Lactobacillus Plantarum lead to induced apoptosis(Cell dealth) and ongoing Anticancer drug inhibited the cell and signalling pathway is inhibited.

For study on live mouse in this the breakdown of microbiome and reduced the chances of systemic cancer therapy. For evaluation in mice the chronic treatment with antibiotic or sterile environment is raised.They are placed with cutenous tumor and given treatment of immunotherapy experimentally with CpG-oligonucleotide or platinum chemotherapy. In the immunotherapy treatment the antibiotic and germ free mice have less production of cytokinin and few tumor dealth .For the Platinum treatment the germ free mice and antibiotic produced enzymes and then generation of oxygen reactive species. The different study is done between the Cyclophosphamide and Microbiota. The Cyclophosphamide and Microbiota.The Cyclophosphamide stimulated the Gram+ bacteria to originate from small intestine to the lymphoid organ to helper T cell and memory T-cell. In the antibiotic treatment and tumor bearing mice not having specific type of bacteria and stimulation of T cell is reduced and decreses the response after treatment. Other reserch study which indicated the immunotherapy indicated the microbiota.The CLTA inhibitor affect the T-cell response for B fragilis.(Aarnoutse et al)(Iida et al)(Pennisi et al)(Vetizou et al)(Sivan et al)(A.J et al)(Viaud et al).

Changes of the Microbiome as the treatment of Cancer

For study the suggestion is microbiome play an important role in the treatment of cancer. So the changes in the microbiome affect the benefits to patient. For reserch point of view changes in the microbiome prevent cancer developed.

Risk factor of CRC to Intestinal Microbiota and Probiotic

In 2008 the Colorectal cancer is the 3rd diseases and approx 1 millon new cases registered (Bray et al). The CRC is dangerous diseases in which only 5% chances of survival in total 30-63% and 10% condition with Metastatic CRC. (Geier et al)The risk factor is orgin is obesity and the diet

(Huxley et al, Uccello et al).The strong evidence and the causative agent is red meat and consumption of alcohol, the protection of this harmfull CRC is Fruit, Vegetable and dietary fibre various compound which contain hetrocyclic aromatic amine polycyctic aromatic hydrocarbon nitriles and nitrates.(Boyle 2000, Langman,2000,Cross et al. 2010,Sinha,2004)Which is known as Mutagen in the actinology of CRC. (Miller et al)For compare of Germ free rodent to conventional rodent.So developed germ free rodent developed spontenous or induced tumor but in conventional rodent the intestinal carcinogen give their role (Tlaskalova´-Hogenova ´ et al) (Vannucci et al.). Verify study of the CRC and certain commensal bacteria i.e. E coli type of Enterotoxigenic Bacteriosides etc. The bacterial(b.fragilis)found enriched colon of CRC patient compared to healthy patient. There are many mechanism by which b fragalis do work to colon carcinogenic through which cancer cell proliferation is activated by the TH17.depending pathway.B.fragilis has been suspicious which increses the genital toxicity of HCA. Generation of mutagen during the high temperature of cooking of meat. The existing evidence is seen butyrated producing bacteria and inverse connection between the CRC and bifidobacterium.(Culpepper and Mai 2013).

A comparison of study where the CRC patient and found in the stool of the CRC patient and found dysbiosis and reduced the species of bacteria, through which included bifidobacterium and ruminocossus bromii (Sobhani et al. 2013. reduce the mucous adherent, the bacteria; Bifidobacterium was found in CRC patient compare to healthy patient. To decreses the core species bacteria such as Bifidobacterium and the Ruminococcus bromii. Changes in the intestinal microbiome,including decreses the bifidobacterium for the CRC initiation.For the CRC patient the Firmicutes was found in the intestinal lumen in CRC patient to precancerous.Diet is responsible to increses the microbiota.

The Two example of non-digestable carbohydrates are starch,fructo-oligosaccharides, galacto-oligosaccharides which stop the growth of bifidobacterium for ingestion of prebiotic starch the increses the Ruminocococcus bromii and decreses in firmicutes was observed.The Probiotic,Prebiotic and both dietary component protect against CRC.by alteration the microbiota. (Zhu et al. 2013)The patient having obesity problem have more chances of CRC and changes of the intestinal microbiota.Increses the firmicutes and decreses the bifidobacterium which suffer obesity.The risk factor of CRC is Age.A large scale cohort study is seen 35,292 adult having age 18-96 years and it is suggested that bifidobacterium decreses when Ecoli and Enterococci increses.The connection between CRC and aging changes the compostion of gut microbiota.

For initiation of CRC the inflammation play a role in tumor. During the condition of inflammation which affect DNA damage and mutation of colonic epithelium cell, Inflammation reaction such as reactive oxygen species and nitrogen immediate produced. Inflamation reaction such as reactive oxygen species and nitrogen immediate produced. Inflammation produced breakdown of intestinal barrier function by decreses mucin production and peptide production through which increses the accessibility of mutagen (Food-borned) and microorganism the genotoxic capability present in the lumen. The tumor is started through this mutagenic event. Inflammation is responsible for tumor growth by cell proliferation and survival via various possible way.

The IBD,UC and Chronic diseases are risk factor of CRC.The pathogenic condition developed acute colitis then appear IBD and at last dysbiosis in intestine happened bacteria is repeated in IBD such as Clostridia group, fusobacterium, adherent invasive E.coli etc.In experimental model of E.coli 100folds was observed in intestinal colitis.For study the bifidobacterium decreses the condition of IBD in patient. Microorganism is responsible for induced and decreses the inflammatory diseases.The responsible microorganism are B fragalis,adherent E coli and clostridium difficile which break intestinal barrier and CRC and IBD happened in some patient. In recent study between commensal adherent invasive E.coli or human commensal enterococcus Faecalis causes colitis in azoxymethane. Both treatment the colitis is involved and cytokine is involved which is responsible for inflammation(IL-6,IL-7,IL-8,TNF-a etc).The mice which is treated with Ecoli which developed invasive carcinoma but the E.faecalis developed tumor.The presence of Polyketide synthtase in Ecoli.In CRC and IBD patient the Ecoli is present in their detection and examined.For more study on polyketide synthtase it is proved that it promote DNA damage Invitro and promote tumor in mice. The polyketide synthtase is synthesised by genotoxin another name is colibactrin, which developed CRC. The polykeptide synthase play a most important role in inflammation as well as invasive and development of CRC.For study it is clear that intestinal dysbiosis increses IBD.The inflammation inhance expand of microorganism and which initiated colorectal tumor. (Ohigashi

et al. 2013) (Sobhani et al. 2013) (Enck et al. 2009)
Several risk of CRC is diet,obesity,aging and inflammation.For dietary probiotic the induced the microbiome and risk is reduced of CRC . (Dunlop et al. 2013)By yoghurt consumption for about 45,241 volunteer recruitment from EPIC. The various strength point of this study. The yogurt is consumed and 5 EPIC centers.Which is considered and some paper detected for CRC and consumption of yoghurt.Then question is asked then the consumption of yoghurt is alone or with dietary supplement.Another study is claimed that yoghurt is used with little probiotic content of yogurt.The weakness of this study is consumption of yogurt is alter the life style through confounding factor and atlast result is seen the risk factor of CRC.Another trial is happened for 398 colorectal patient and daily consumption of L.casei and due to daily consumption the protection of colorectal tumor.Decreses the probiotic link for patient the risk of CRC. The various Invitro and invivo studies determined the risk of colorectal cancer. (Grivennikov 2013) (Arthur et al. 2012) (Fyderek et al. 2009).

Protect Colon Cancer by Micro-organism

In this time it is suggested that analysed of microorganism in the environment in different and strain depend the causation of suspetibility of tumor and growth of tumor. Study is conducted for bacteria such as Fusobacterium nucleatum or P. gingivitis, Escherichia coli, Bacteriodes fragilis etc is enhanced or present in colon cancer patient and some are absent bacteria such as Blautia, Bifidobacterium, Lactobacillus genus. The sepredibility of tumorogenisis is not defiantly reated in particular population. Identification of oncomicrobes found Clostridia. The complex form of microbiota and corelletion between network of microorganisms in the intestine [Gut] and tumor is formed. The microbiota affect the health or enlargement through inflammatory and pproliferation which dependent of host cell.(Lee et al,2015)(Gagniere et al,2016)(Atarashi et al,2011)(Evrard et al,2011)(Dhong et al,2012)
The strain of probiotic have clinical application for example lactobacillus and bifidobacterium havr their different –different activity. Antiflamatory activity is due to cytocinin production in dendritic cell in human.A another study which suggested which suggested that mice take lactobacillus which control the toll like receptor 2(TLR2),TLR4 etc and tumor incidence is decresed. Cancer is scenarios and two apoptosis occurs but thr malignant cell is not dead. The apoptosis process is complex and follow many important pathway. The bacteria lactobacillus rhamnosus strain which reduce and multiplication of tumor by increses apoptosis(Cell dealth)and inflamaation is inhibited.It is evidenced that lactobacillus increses the intestinal barrier function in the TLR2 manner.It is a reported that lactobacillus kefiri.In which rate of apoptosis affect breast cancer,Gastric acid cancer,etc and potential therapeutic agent have seen and treatment is possible of gastric cancer.Radicle which are free which are more reactive and more harmful for tumor development.A new study determined that important of lactic acid bacteria which is determined by innate immunity it is beneficial for antioxidant IL-12 is stimulated by various mechanism through which stimulated colorectal mouse model which is best to show anticancer and antiinflamatory activity.In some article it is suggested that probiotic decreses the production of oncogenic enzyme.In this study also demonstrated that lactobacillus rhamanosus and lactobacillus acidophilus also decresed the preneoplastic aberrant crypt focci in rat model.(Kuugbee et al)(Gamallat et al)
Strain are responsible to metabolide specify type of compound.E.g. N-nitrso compound and hetrocyclic aromatic amine.The decomposition of carcinogenic enzyme which appears the strain and viability used as probiotic and host is also included in this specific condition.
e.g.of host is pH, bile presence. Several probiotic bacteria such as L.casei, L.plantarum, Bifidobacterium breve etc.which work on different mechanism in which linolic acid.The bacteria is produced by fatty acid in the colonocytes and which show antiproliferative and proapoptosis activity which is locally action.(Ciorba et al)(Ghoneum et al)(Verma et al,2013)
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Prevention and Treatment of Colon Cancer by Probiotic

The natural sources which confer anticarcinogenic activity and through which the Colon cancer is prevented by probiotic and study is conducted in this year. Daily consumed the probiotic which affect quantitative and qualitative profile of intestinal microbiota and through which stimulated the chronic inflammation and carcinogenic compound produced by intestinal dysbiosis. The regular intake of some probiotic like lactobacillus, acidophilus, Lactobacilus plantarum and B.longum in higher dose for 16days through which diversity is increses and Richness of microbial with CRC and colorectomy is

happened.In this the production of intestinal microbiota by patient composition of healthy individual. E.g. of intestinal microbiota enzyme such as Azoreductase, Reductase, Nitrate Reductase ,7-alpha-dehdrogenase which convert aromatic hrdocarbon to amine by produced Aglycon cresol,Aglycon,Ammonia.These compound have cytotoxic activity and Genotoxic activity.These contribution and colon cancer happened.The vivo study cleared that daily intake of probiotic bacteria which reduces the CRC by enzyme.Probiotic is stimulated by phagocytic activity and combination by the immune vigilance through which the cancer cellois eliminated in the initial state of development of cancer.The immunomodulatory is depend on strain and persistant is affect on GIT. The Posology is strongly influences the immune system which able to enhance the immune system and protect by colon cancer.The dose is important around(10^9colony forming unit-CFU/day).The intestinal permanace time is 48-72hrs) in which immuno stimulation on host.The randomized and controlled preliminary study in their evaluation the change in microbiota patient have received CRC which affect their result i.e. Progressed free survival.

It is also suggest that regular intake of probiotic which affect intestinal permeability by alteration the cell protein and carcinogenic compound is absorbed and it act negatively on the colonocytes by increses its potential.If the treatment is done with probiotic such as L.plantarum,L.acidophillus etc which induced the affect of cell junction protein through colonic epithelium layer.(Gayathri et al)(Ohara et al)(Liu et al)(Vinderola et al)(Galdeano et al)(Madsen et al,2012)(Karczewski et al)

Intake of probiotic the pro-apoptopic is increses through which tumor necrosis factor(TNF-a)production is induced and it is most important factor of cancer is induced and Caspade factor 3 apoptosis is also initiated.In an random trial for two diseases patient i.e polypectorized patient and colon cancer patient is orally given L.rhamosus and B.breve combination through which reduced the several cancer biomarkers and genotoxic activity is decresed.(LeBlanc et al)(Wan et al)(Rafter et al,2007)(Kotzampassi et al)(Pala et al)(Koliarakis et al)

Cancer Consequences

For evaluating the data regarding probiotic which means to cure of cancer and reduce the adverse effect of treatment is scant. Now the earlier study of probiotic the result concluded that no trial is done for changing the microbiota which is used in the treatment of colorectal cancer which given a progressive and response rate. In the earlier time two trial is conducted which evaluated the effect of probiotic in CRC in bladder cancer. In 1995 first trial is concluded in which the 138 patient is taken and with primary bladder treatment with transurethral resertion of bladder tumor.(Naito et al) After some time patient treated with Lactobacillus Casei or placebo. Patient receive this probiotic and by the Lactobacillus received treatment rate is 79.2% and 54.9% treated with placebo this cancer recurrence rate is in 1year.Another trial is conduct in 2008 this trial is for 207 patient.(Salva et al) In which patient have superficial bladder cancer.The patient is treatment is done by transurethral reserction of bladder tumor followed by transurethral epirubicin 100 patient received this lactobacillus casei preparation for 1year.Another free survival for 3year and recurrence or correction rate is higher. For this trial the conclusion is not suggested for relative safe administration of probiotic.(Redman et al)

Conclusion

In this review article we see the consequence of probiotic and the colorectal cancer seperatly. But the use of probiotic such as Lactobacillus and bifidobacterium helpful for treatment of colorectal cancer patient and increses the compliance rate of patient. In this review article micro biome is added for better outcome. For trial and studied different article of micro biome and their alteration give better outcome for treatment of Colorectal cancer.

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