ABSTRACT

Ethnomedicinal relevance: In developing countries, diarrhoea becomes a major health problem leading to morbidity and mortality in rural communities. In the present article we have tried to enumerate simple and single herbal remedies helpful in curing diarrhoea.

Materials and methods: literature survey was conducted with help of several important Ayurvedic text to collect information on plants used for treating diarrhoea.

Results and conclusions: 140 single herbal preparations were reported in the present article. The study has supplied information on many medicinal plants and their method of uses. Such simple preparations may helps to the traditional healers in management of diarrhoea in initial stage. Moreover, these user friendly methodologies may contribute in initiation of advance investigation for discovery of new compounds and formulation from these potential plants.

Keywords: Diarrhoea, Nidan, Purva rupa.

INTRODUCTION

Diarrhoea has long been recognized as an important health problem in all age groups and is a major cause of morbidity and mortality in rural communities of socio-economically backward and developing, third-world countries. It may be infectious or non-infectious [1] with increase in frequency of passage of liquid faeces and alteration in stool character (amount and consistency). Infectious causative organism (virus, parasite or bacterium) spreads through contaminated food or drinking-water or from person to person as a result of poor hygiene [2] while different toxins, chronic diseases or antibiotics are contributed in non infectious diarrhoea [3]. Clinically it involves both an increase in the motility of the gastrointestinal tract, along with increased secretion and reduced absorption of fluid and loss of electrolytes (particularly sodium) and water [4] in the small and/or large intestine resulting in profuse watery stool output [5]. Globally, diarrhoea accounts for more than 5-8 million deaths annually, majority of whom are infants and children below 5years old especially in developing countries [6-8]. 88% of diarrhoea-related deaths are caused by inadequate sanitation along with poor hygiene and clinically due to dehydration, which results from the loss of electrolytes in diarrhoeal stools [9]. Economically, diarrhoea is one of the major health challenges to humanities as it causes loss of productive life due to premature mortality, disability and increased health-care costs [10].

Usually, the treatment Approach toward diarrhoea is non-specific, with the goal of reducing the distress and trouble of recurrent bowel movements [11, 12]. Oral rehydration therapy (ORT) is first line of treatment, when acute diarrhoea not control with ORT intravenous maintenance of fluid and electrolyte balance, antisecretory agents (bismuth compounds and octreotide); probiotics; anti-infectives (ciprofloxacin or levofloxacin) spasmyloytic (loperamide, atropine, hyoscine) or other anti diarrhoeal agents (a2-adrenergic receptor antagonists e.g. clonidine; calmodulin inhibitors e.g. zaldaride malate) are used [13-15]. A global diarrhoeal disease control programme was constituted by the WHO [16]. Along with modern drugs, the programme includes treatment based on indigenous practices as well as the evaluation of health education and prevention approaches. Many national and international organizations are supporting this program but still it remains a challenge before doctors. It is therefore important to identify available natural drugs as well as explore documented traditional medicinal knowledge, indigenous herbal preparation. So that it may prove an alternatives to currently used anti-diarrhoeal drugs, which are not always free from adverse effects [17-19].

Ayurveda view of diarrhoea

Diarrhoea is described in Ayurvedic classics with the name of "Atisara". Atisara term is made up of two terms "ati" (excessive) and "sara" (passing of liquid matter through anus). It means excessive flow of watery stool through anus [20-22]. Dalhana on his commentary on Sushruta samhita stated that passing of watery stools in increased quantity is a characteristic feature of atisara [21].

Nidan (Etiology)

Different etiological factors have been mentioned in Ayurvedic classics [20-22]. Various ahara janya (dietary) factors viz. Guru (heavy to digest), atisnigdha (fatty or greasy diet), atavraksha (rough or dry diet), atishtha (piangent/hot in nature), atidrava (excessive liquid diets), atitsirtschaft (bulky diet), atisheeta (cold diet), atimatra (excess quantity), ati-ambupana (excessive intake of water), viradhasha (incompatible diets), vipasya-bhajana (incompatible or improper cooked foods), krisha-shashka mansa (unhygienic fat free meat intake), atsaknya (intolerable food) and anurit bhajan (intake of raw oily and germinating seeds), dushita jala (polluted water) are described in texts. Vihar janya causative factors include madyatipana (excessive intake of alcoholic beverages), atijalakrika (excessive swimming), vegatigaila (suppression of natural urges), ati vyavaya (excessive sexual indulgence), vispathayogya (Intake of poisonous substances), bhaya (fright), shoka (grief), ritu viparyaya (sudden change in season). It may caused by improper use of sodhana therapy (body purification treatment) or secondary to some other diseases like krimi doshas (intestinal worm infestations), arsha (piles); shosa (tuberculosis) [20-23].

Purva rupa (Prodromal symptoms)

Pricking pain in cardiac region, umbilical region, anal region and abdomen, stool impacting, abdominal distension and other symptom is malaise, retention of flatus, constipation, flatulence and
indigestion has been described as prodromal symptom of atisara [21-23].

**Bheda of atisara (Types)**

There are broadly six types of atisara viz, vataja, pittaaja, kaphaja, sannipataja, sukaja and amaja atisara [21] or vataja, pittaaja, kaphaja, sannipataja, shokaja and bhayaja [20]. Keeping in with the line of treatment Caraka has divided each atisara in ama and pakva. In amatisara, the pathology is more dominant in the pittadhara kala rather than the pureshadhara kala. Here the vitiation of pittadhara kala occurs due to the nidanousavana like guru snigdha aharah, dushita ambupana etc. This pathology is similar to that of the osmotic diarrhoea where even the causes are similar like the excessive intake of carbonated fluids (dushita ambupana), non absorbable solutes etc. [24], and the treatment is also similar to that of amatisara where langhana is indicated i.e., here the diarrhoea comes down by the non intake of food. In pakwatisara, the pathology is more dominant in pureeshadhara dharah kala i.e., pakwashaya is more dominant in pureshadhara kala i.e., pakwashaya than pittadhara kala. Here the vata vriddhi occurs due to nidana sevana and this vridha vata hampers the dosha samshoshina (kleda samshoshna) and it drags the udakamsaha from the udakavaha srotas (rasa, kapha, meda etc) in leading to the increased watery stool [20]. The pathology is similar to that of the secretory diarrhoea, where there is the activation of intracellular mediation and water is dragged into the colon [24, 25].

**Samanya Lakshana**

**Amatisara Lakshnas**

Amayuktsha sweta varna mala pravriti, with bad odour. Mala along with pain, mala along with sound admanah atopa due to ojernna amma the vitiated dosha will further vitiate the kosta and will bring out the feces along with the food and the mala will have different colours coming out with food very frequently [20].

**Pakwatisara Lakshana**

Little by little in small quantity of mala along with sound, mala along with pain mala along with froth mala along with tearing pain mala with nodule horripilation difficulty in breathing dryness in mouth, pain in kat, uru, trika, janu, parso, stricture in anus [20].

In Astananga Hrdyaya, it has been told that when the ama has been well digested, the Agni gets strong and the patient will eliminate feces which is frothy, slimy associated with the pain in little quantity and very frequent [23].

**Management of atisara**

Atisara chikitsa is planned after seeing the sama and nirmna avasta of the dosa. Therapies which are mainly of deepana, pachana and langhana should be adopted in the ama avasta of the disease. In the niranavasta, the drugs which have stambhana properties are to be selected. Acharya Susruta [21], Bhava Prakashas [26], Bhaishaja Ratnawali [27] all have stated that since the treatment of atisara is not apart from the treatment of ama and pakva, hence in all kinds of atisara signs and symptoms of ama and pakva should be determined first [21]. If atisara has not reached the stage of incurability, it should be managed with the measures according to dominance of dosha and by examining hetu, upashaya and specific dosha. Acharya charaaka has separately explained the chikitsa of amavasta and pakwastha, clearly mentioning the drugs in each condition [20].

**Amatisara chikitsa**

In case of pravruda doshas, upakshanbh should be done because use of the sangrohi or stambhana drugs may lead the doshas to cause many distresses like dandaka, alasaka, admana, grahani, arshas, shotha, pandu, pleeha, kusta, gilma, udara, jwara, etc. caused by amadosha [20-23]. If pravruda doshas are being expelled with difficulty, then their elimination should be supported by giving harcchaksas. In case, madyama pramana dosa, deepana-pacana karmas have to be carried out. When there is alpodosha, then langhana would be beneficial. Either upavasa or langhana with alpa ohara is advisable. Especially in amatisara, amavatatisara, shleshmatisara and pittatisara, the longhana is advised by the author. After complete amapachana and aginedeeana, the amatisara attains pakwasthaha. Then it has to be treated in lines of pakwatisara. The expulsion of the mals should be stopped by stambhana karma.

**Pakwatisara chikitsa**

Acharya sushruta says, the stambha should be carried out using the drayvas [21]. The drugs predominantly of deepana, pachana quality, ushna veyra pravrotta and which does drava soshana is considered as grhi drayva [28]. Sangrahi dravya are generally agni mahabbhata pradhana, but according to rasavasheshaka sangrahi dravya are pratiti and agni mahabbhata pradhana [29]. The drugs which possess rooksha and sheeta veyra, kaysha rasa, vatakarakha and are easy for digestion does the stambhana action in the body [26]. Both these actions are termed as ushna grahi (pakwa sangrahaka) and sheeta grahi (ama sangrahaka) by adhamalla, commentator of sarangadhara samhita [29].

**Single drug remedies form Ayurvedic texts**

A basin is form around umbilicus by the paste of Amalaki (Emblica officinalis Gaertn.) and is filled with Adara (Zingiber officinale Rosc. juice). It is very helpful in checking even severe diarrhoea [30]. Pippali (Piper longum Linn.) with honey, Gritraka (Plumbago zeylanica Linn.) with buttermilk or only tender fruits of Bilva (Aegle marmelos Correa) is very effective in controlling diarrhoea [20]. Abihpen (Papaver somniferum Linn.) mixed with the bark of Kutiplu (Strychnos nux-vomica Linn.) and honey checks all types of diarrhoea [31].

Equal amount of powdered Ankot (Alangium salviifolium) root bark, Patha (Cissampelos pareira Linn.) and Duruhiradira (Berberis aristata) crushed with rice water and dried under shade is administered with rice water for the treatment of all types of diarrhoea [26, 30].

Ankot (A. salviifolium) root powder or Patha (C. pareira) leaf paste with buffalo’s buttermilk is used to cure diarrhoea [32].

Ativisha (A. heterophyllum Wall) along with Bilva (A. marmelos), Mocarasa (oleo gum resin obtained from plant S. malabarica Schott and Endl.), Lodhra (Smpylcos racemosa Roxb.). Dhataki (Woodfordia fruticosa Kurz.) and Amra (M. indica) seed decoction is a effective treatment of severe diarrhoea [26].

Decodr of Badara fruits (Zizyphus jujube) mixed with jaggery and oil should be taken orally in case of diarrhoea [21, 23].

Steam cooked Badara fruits (Z. jujube) and Bilva (A. marmelos) fruits is very helpful in controlling diarrhoea [21].

Bark of Aralu (Amaltas) (Dalbergia sissoo Roxb.) pounded and mixed with Sunthi (Z. officinale) should be taken with rice water to increase frequency of stool [31].

Bark of Aralu (A. excelsa) smeared with ghee and heated on steam followed by crushing and mixing with honey may be utilized to check severe diarrhoea [23].

Bark of Sallaki (Rosswellia serrata Roxb. Ex Coleb), Badri (Z. jujube), Jambu (Syzygium cumini (Linn.) Skeels), Priyalu (Buchanania lanzan Spreng). Amra (Magnifera indica Linn.) and Arjuna (Terminalia arjuna (Roxb.) W. & A.) mixed with honey and taken with milk checks hemorrhage [30, 33].

Bark of Tinduka (Diospyros peregrina (Gaertn.) Gurke.) is wrapped with Kasmini (Gmelina arborea Roxb.) leaves with paste of earth and cooked in mild fire. The juice so extracted is mixed with honey and taken. It destroys all types of diarrhoea [34].

Barks of Priyal (B. lanzan.), Salmali (S. malabarica), Plaksa (Ficus lacor Buch.-Ham.), Sallaki (B. serrata) and Tinisa (Ougeinia ooejennisis (Roxb.) Hochr.) are pounded and mixed with honey. Then they are dissolved in milk and taken for diarrhoea with blood [21].

Bhanga (Cannabis sativa Linn.) and Jatiphala (Myristica fragrans Hort.) in equal parts mixed with double amount of Indrayava (seed of Holarrhena antidysenterica Linn.) and made into linchs. It checks all types of diarrhoea [26].

Bhanga (C. sativa) mixed with latex of Udumber (Ficus racemosa Linn.) is made into pills. It checks all types of diarrhoea [35].
By taking Chandan (Santalum album Linn.) combine with sugar and rice water, one become free from burning sensation, thirst, prameha (diabetes) and hukat (diarrhoea) [20].

By taking Pippali (P. longum) with honey, buttermilk with Citra (P. zeylanica) and by eating tender fruits of Bilva (A. marmelos) one becomes free from bowel disorder (diarrhoea) [20].

By using the powder of Pippali (P. longum) or Marica (Piper nigrum Linn.), chronic diarrhoea can be destroyed [23, 33]. Cold infusion of Shalmi (S. malabarica) petioles, kept overnight should be taken after adding Madhuka (Madhuca indica J.F. Gmel) and honey [21].

Covering of Amlíka (Tamarindus indica Linn.) seed, Suntí (Z. officinale) rock salt and Yavani (Trachyspermum ammi Linn. Sprague) are mixed together and taken with fresh butter milk [31].

Daruharidra (B. aristata), Durlabha (Fugonia arabica), Bilva (A. marmelos), and Raktacandana (Pterocarpus santalinus Linn.) checks diarrhoea caused by pitta [21].

Decoction made of the crushed tender leaves of Simsapa (Dalbergia sissoo Roxb. ex DC) and Kovidara (Bauhinia purpurea Linn.) along with barley and mixed with ghee and milk should be given as shamy enema in discharge of mucus, tenesmus and prolapsed of rectum [23].

Decoction of Bilva (A. marmelos) and seed kernel of Amra (M. indica) mixed with honey and sugar checks vomiting and diarrhoea [33].

Decoction of Bhanýaka (Coriandrum sativum Linn.), Suntí (Z. officinale), Balalaka and Bilva (A. marmelos) alleviates pain, constipation and acts as digestive and appetizer in diarrhoea patients [33].

Decoction of Indrayava (seed of H. antidysentrica) and Patol (Trichosanthes indica) mixed with honey and sugar should be used in all types of diarrhoea [28].

Decoction of Kutaja (H. antidysentrica) bark and seeds and Musta (Cyperus rotundus) added with sugar and honey checks diarrhoea [32, 33].

Decoction of Musta (C. rotundus) alone should be taken mixed with honey [21].

Decoction of Palasa fruit (Butea monosperma (Lam.) Kunz) followed by warm milk should be given according to strength. By this, impurities are eliminated and thus diarrhoea is checked [20, 23].

Decoction of Patola (T. indica), Indrayava (seed of H. antidysentrica) added with sugar and honey should be taken. It checks vomiting and diarrhoea [33].

Decoction of seed kernel of Amra (M. indica) and Bilva (A. marmelos) added with sugar controls severe vomiting and diarrhoea [26, 28].

Decoction of Syonaka (Oroxylum indicum Vent.) and Kutaja (H. antidysentrica) bark alleviates all types of diarrhoea [28].

Decoction of the bark of Dadima (Punica granatum Linn.) and Kutaja (H. antidysentrica) mixed with honey checks severe diarrhoea with blood immediately [33, 36].

Decoctions of bark of Badari (Z. jujube) Arjuna (T. arjuna), Jambu (S. cumínil), Amra (M. indica), Sallaki (B. serrata) and Vetasa (Salix caprea Linn.) mixed with sugar and honey checks diarrhoea [21].

Diarrhoea patients are advice to drink medicated processed water. For processing of the water Vacha (Acorus calamus Linn.) and Právithvá (Aconitum bimá (Ham.) Rapácis.) or Mustá (C. rotundus) and Parpata (Fumaria vaillanti Loisel.) or Haridra (Curcuma longa Linn.) and Suntí (Z. officinale) are used [20].

Dirghavinita (Arálu [A. excéla] putipaka (juice extracted by closed heating) in diarrhoea [21, 33].

Enema of the petioles or exudation of Salmalí (S. malabarica) boiled in milk and added with ghee is useful in diarrhoea with tenesmus [20].

For child, modaka (sweet bolus) prepared of dhátki (W. frutícosa) flowers, sakaraka and parched paddy should be given in diarrhoea [21].

Fried Suntí (Z officinale) mixed together and pounded with Eranda (Ricinus communis Linn.) juice alleviates pain due to amatírasa and stimulates digestion and appetite [26].

Fruit pulp of Bilva (A. marmelos) and Madhuka (M. indica) mixed with sugar and honey and taken with rice water checks diarrhoea caused by pitta and rakta [21].

Ghee and oil mixed together should be given followed by mulched warm milk or that cooked with Eranda (R. communis) root or tender fruits of Bilva (A. marmelos) [23].

Ghee cooked with leaf-buds of Kshirivriksha [Ashvattha (Ficus religiosa Linn.), Plaksha (F. lacor), Udumbara (F.racemosa), Vata (Ficus benghalensis Linn.) and Parisha (Thespiesa papulnea Soland. Ex Correa)] should be taken with honey and sugar [21].

Ghee processed with four times water and Dhanýaka (C. sativum) paste should be given in diarrhoea caused by pitta and associated with pain. It is also act as appetizer and digestive [32].

Goat’s milk processed with kamala (Nelumbo núcfera Gaertn., Utpala and Lajailu (Mimosa pudica Linn.) or Mocarasa (Oleo gum resin obtained from plant S. malabarica) or Sarvika (Hemidesmus indicus R. Br.), Madhuka (M. indica) and Lodhra (S. racemosa) or leaves bud of Nygrodha (F. benghalensis) etc. Mixed with honey and sugar is used for drinking, eating and sprinkling around anus in case of diarrhoea [23].

Gruel prepared with Haritaki (Terminalia chebula Retz.) Pipálmalikúla (P. longum) and Bilva (A. marmelos) act as carminative [23].

Hanging root of Nygrodha (F. benghalensis) pounded with cow’s butter milk should be taken. It checks acute diarrhoea [30].

Haritaki (T. chebula). Suntí (Z. officinale), Mustáka (C. rotundus) and jaggery-these four mixed in equal quantity are made into pills known as catuhsama modaka. It checks all types of diarrhoea [26].

If stool comes out in small quantity and with obstruction or pain, the patient should be use the warm paste of Haritaki (T. chebula) and Pippali (P. longum)] [21].

In boiled goat milk powder of haritaki (T. chebula) should be put. The curd so formed should be given in case of dysentery [31].

In case of aggravation of vata, liquid ghee should be processed with Pancamu [20].

In case of dehydration, if digestion is good, the patient should be treated with milk cooked with Bala (Sida cordifolia Linn.) and Suntí (Z. officinale) followed by intake of jaggery mixed with oil in the morning [26].

In case of diarrhoea with blood, tender fruits of Bilva (A. marmelos) mixed with liquid diarrhoea, honey and oil should be taken. It checks disease immediately [21].

In case of diarrhoea, kháda made of Cangeri (Osalis coricinula L.), Cukrika and Dugdhika (Euphorbia thymifolia Linn.) added with fatty layer of curd, ghee and pomegranate (P. granatum) seeds should be given [20].

In case of dysentery, the patient should take diet consisting of vegetables prescribed in constipation, meat soup with profuse fat and processed with curd and pomegranate (P. granatum) and sali rice cooked with Sesamum (Sesamum indicum Linn.), black gram or green gram [23].

In case of gripping, the patient should be given diet with milk boiled with Trikátu (Marica (P. nigrum), Pippali (P. longum) and Sunthi (Z. officinale) and salpání (Desmodium gangeticum DC.) [21].

In diarrhoea associated with blood Arjuna (T. arjuna) bark mixed with honey should be taken with milk. It checks hemorrhage [33].

In diarrhoea caused by pitta, powder of Bilva (A. marmelos), Daruharidra (B. aristata) (bark), Hirbrá (Colesus vettiveroides) and Durlabha (B. arabica) mixed with honey should be taken along with rice water [20].

decocotion prepared with Amra (M. indica), Vandaka (Loranthus longiflorus Desr.), Virtaru, Brihati (Solanum indicum Linn.), Kantakari (Solanum surattense Burm.f.), Mudgaparni (Phaseolus trilobus Ait.) and Masaparni (Teramnus labialis Spreng) should be given in diarrhoea [21].

Gajáppilli (Scindapsus officinalis Schott) sweetered with honey and sugar is advice in diarrhoea with blood and mucus [37].

Paste of Satuvári (Asparagus racemosus) should be taken with milk followed by on milk diet helps to control diarrhoea with blood [20, 23, 33].

In diarrhoea with pain and tenesmus, a non-unctuous enema prepared with decoction of Dashmula added with honey and milk is an excellent remedy [21].

In difficult elimination of impurity, Haritaki (T. chebula) should be given to expel it [20, 21, 23].
Intake of Bilva (A. marmelos) assists in management of diarrhoea with blood. It eliminates pain due to ama and constipation as well as alleviates disorders of bowels [26, 33, 36]. Intake of decoction of Hijala (Bauhinia acuminata) (Linn. Gaertn.) Leaf mixed with honey alleviates amatisara (diarrhoea with mucus). Similarly action is observed with the decoction of Kutaja (H. antidysentrica) bark [33].

Jatiphala (M. fragrans) with Sunthi (Z. officinale) rubbed in cold water is given to check diarrhoea and make the stool formed [35]. Intake of Achara indica) bark extracted by putapaka (closed heating) is added with oil and taken. It alleviates vomiting and diarrhoea with blood and mucus [31].

Juice of Karpara (Gossypium herbaceum Linn.) and plaksa (F. lacor), added with honey is useful [33].

Kapitha (Feronia limonia (Linn.) Swingle) Salmali (S. malabarica), Phanji (Ficus carica Linn.), Vata (F. benghalensis), Karpara (G. herbaceum), Dadima (P. granatum), Yuthika (Jasminum auriculatum Vahl.), Kacchra (durlabha) (F. arabica), Slesmataka (Cordia myxa Roxb.), Sana, and Cancu these processed with curd are useful in diarrhoea [21].

Khad a (a dietary preparation) made of Gangeri (O. corniculata), Cukrika, and Dugdhika (E. thymifolia) added with fatty layer of curd, ghee and pomegranate (P. granatum) seeds should be used [20].

Khad a of the tender leaves of Kasmarya (G. arborea), Madayanti (Lawsonia inermis Linn.) and Yuthika (J. auriculatum) should be made added with sour and salt [20] or The dietary preparation Khada made of tender Bilva (A. marmelos) fruits, equal quantity of sesamum (S. indicum) paste, supernatant layer of curd and added with sour and ghee checks dysentery [20]. These can be a good remedies for diarrhoea patients.

Khad a should be made of the tender leaves of Vetasa (S. caprea) etc including Yuthika (J. auriculatum) added with ghee, sour, and salt. It acts as an excellent checking diarrhoea [20].

Decoction of Kutaja (H. antidysentrica), Ativisa (A. heterophyllum), Bilva (A. marmelos) Balaka and Musta (C. rotundus) is very useful in even chronic diarrhoea condition having severe pain and blood [21, 33].

Decoction of Kutaja (H. antidysentrica) seeds or bark checks even severe diarrhoea [23, 37].

Lavana-catushama formulation containing Lavanga (Syzygium aromaticum (Linn.) Merr. & Perry), Jatiphala (M. fragrans), Jiraka (Cuminum cyminum Linn.) and tankan [borex] powder. Is is administered orally after adding honey and sugar. It acts as digestive and provides relief from diarrhoea caused by ama[27].

Overnight immersion of Nygrodha (F. benghalensis) leaf buds, Udumbara (F. racemosa) and Asvattha (F. religiosa) in hot water followed by heating to make decoction. This decoction is again cooked with ghee, half sugar and ¼ honey. It can stop diarrhoea with blood [20].

A digestive powder prepared with leaves of Aralu (A. heterophyllum), Tinduka (D. peregrina), Dadima (P. granatum) Kutaja (H. antidysentrica) and Sami (Prosopis specigera) Linn. is useful in amatisara [21].

Decoction prepared with Leaves of Jambu (S. cumini Linn.Skeels), Dadima (P. granatum), Sringatka (Tropae nations Linn.), Bilva (A. marmelos), Hribera, Musta (C. rotundus) and Sunthi (Z. officinale) capable of checking of diarrhoea [30].

Linctus of Kutaja (H. antidysentrica) bark checks diarrhoea [26, 38].

Linctus prepared with decoction of Kutaja (H. antidysentrica) bark and Ativisa (A. heterophyllum) improve diarrhoea condition [33].

Liquid gruel cooked with Priniparni (Urania picta Desv.) is also very useful in controlling diarrhoea with blood [20]. Similarly liquid gruel processed with Ativisha (Aconitum heterophyllum) sours and Sunthi (Z. officinale) is efficacious is amatisara [20]. Moreover, liquid gruel prepared with Dhatki (W. frutescens) and Sunthi (Z. officinale) decoction added with sour pomegranate (P. granatum) seed is useful in fever, diarrhoea and abdominal pain [32].

Lonika (Portulaca quadrifida Linn.) should be cooked with curd and pomegranate (P. granatum) added with profuse ghee taken as vegetable by patient of diarrhoea [20, 23].

Milk cooked with Eranda (R. communis) root or tender fruits of Bilva (A. marmelos Correa) are effective. [20]. In addition, Ajmoda (Trachyspermum roxburghianum), Arali (A. excelsa) and Madhuka (Madhuca indica) cooked with milk added with ghee, honey and sugar, should be taken in diarrhoea associated with pain [21].

Musta (C. rotundus) rhizomes boiled in milk and water [1:1] reduced to the volume of milk boiled which is effective in diarrhoea associated with mucus and pain [21, 23, 38].

In case of acute diarrhoea fruit pulp of Kapitha (F. limonia) supplemented with Trikatu (Marica (P. nigrum), Pippali (P. longum) and Sunthi (Z. officinale), honey and sugar or Katphala (Myrica esculenta Buch.-Ham) with honey is effective [20, 23].

Pippali (P. longum) with honey or buttermilk with Citraka (Z. zeylanica) or Bilva fruits (A. marmelos) alleviate abdominal disorder (diarrhoea) [20].

One should take boiled Kancata and tender Bilva (A. marmelos) fruit mixed with butter in case of diarrhoea with blood and griping [32].

One should take water processed with Vaca (Acorus calamus), Ativisa (A. heterophyllum), Musta (C. rotundus), Parpata (P. vaillantii), Hribera (Colesus zeylanicus) and Sunthi (Z. officinale) for improving appetite and digestion in amatisara [20].

One suffering from diarrhoea should take water boiled with Vaca (A. calamus) and Pratviva (Aconitum bisma Ham. Rapies) and Parpata (P. vaillantii) [20, 23, 37] or Dhakti (W. frutescens), Badari (Z. jujube) leaves and Kapitha (F. limonia) mixed together with curd [26].

One who defecates frequently with or without stool or with tenesmus should take Sunthi (Z. officinale) with jaggery mixed with curd, oil and ghee [23].

In hemorrhage associated diarrhoea, milk processed with Nygrodha (F. benghalensis) and similar drugs group of plant and mixed with ghee, sugar, honey or butter should be obtained by churning and it should be taken with buttermilk [21].

One who passes blood before or after stool should take milk cooked with tender leaves of Vata (F. benghalensis) etc along with ghee, sugar and honey or it may be curdled and the butter taken followed by drink of butter-milk [21].

Paste of black sesame (S. indicum) mixed with 1.5 sugar and taken with goat's milk checks blood immediately [20].

Paste of Durlabha (F. arabica) root of the size of Udumbara fruit (F. racemosa) should be taken along with the diet of milk processed with the same (Dvadesah) [21].

Paste of Priyangu (Callicarpa macrophylla Vahl.) mixed honey and taken with rice water checks bleeding immediately. The patient, during treatment, should be kept on diet of meat soup of wild animals [20, 37].

Paste of the flower-bud of dadima (P. granatum) mixture with honey [35] or Paste of tila (S. indicum) and mudga (Vigna radiata (Linn.) Wilezek) [21] or Paste of tender leaves of Babula (Acacia arabica Willd.) [30] checks diarrhoea immediately.

Patha (C. parieira) or Amra bark (M. indica) pounded with cow's curd alleviates the disorder and burning sensation of diarrhoea immediately [26].

Pieces of Kosalara, a type of sugarcane, fried in ghee and Laja powder mixed with sugar and honey should be taken. It checks diarrhoea with pain and blood [21].

Pill made of Kesara (Edipta alba (Linn.) Haes.) with water or powder of Nagarakesara (Mesua ferrea Linn.) is an excellent drug for diarrhoea associated with mucus, pain, and blood [32].

Powder of Haritaki (T. chebula), mucksalt and Sunthi (Z. officinale) should be taken with honey and sugar in diarrhoea caused by kapha [37].

Powder of Sunthi (Z. officinale) smeared with ghee is wrapped within Eranda (R. communis) leaves and cooked in putapaka (closed heating) on mild fire. The powder is taken out and mixed with equal quantity of sugar. It is taken in the morning and thus pacifies all sorts of pain due to amatisara [28].

Putapaka of Aralu (A. excelsa) mixed with honey and Mocarasara (Oleo gum resin obtained from plant S. malabarica). It acts as appetizer and can checks all types of diarrhoea [28].

Putapaka of Jivanti (Leptadenia reticulata W. & A.), Mesarisinga (Gymnema sylvestre (Retz.) Schult.) etc. should be administered [21].

Root of Tandulya (Amaranthus spinosus Linn.) mixed with honey and rice water [32] and sugar or Badari (Z. jujube) root should be taken with honey [21].
Seed kernel of Jambu (S. cuminii), Amra (M. indica), Bilva (A. marmelos), Kapittha (F. limonia) and Sunthi (Z. officinale) should be taken with liquid gruel in case of diarrhoea [20]. Seed kernel and bark of Kuta (H. antidysenterica) should be pounded with honey and Ativisha (A. heterophyllum) and taken with rice water. It checks diarrhoea caused by pitta [20].

Slimy enema made of Salmali (S. malabarica) petioles by closed heating should be given [21].

Soup of Mulaka (Raphanus sativum Linn.) [20] or Shati (Hedychium spicatum Ham. Ex Smith.) [23] is efficacious in diarrhoea. One who takes Indrayava (seed of H. antidysenterica) decoction in water keeping on diet of meat soup overcomes diarrhoea caused by pitta [20, 33].

Tender Bilva (A. marmelos) fruit is cooked while being wrapped with the leaves of Jambu (S. cuminii), Dadima (P. granatum) Sringata and Patha (C. pareira). It should be kept overnight and then taken with jaggery and Sunthi (Z. officinale). It checks all types of diarrhoea and alleviates severe grhani [30].

Tender fruits of Bilva, (A. marmelos), jaggery, oil, Pippali (P. longum) and Sunthi (Z. officinale) all these together should be taken in condition of obstructed vatra, pain and tenesmus [35].

Tender leaves of Cavika, Svetamuka (sveta) and Khirivriksha [Ashvatha (F. religiosa), Plaksha (F. lacor), Udumbara (F. racemosa), Vata (F. benghalensis) and Parisha (T. papulnea)] should be pounded and given with oil [31].

The dried vegetable of Lonika and Patha (C. pareira) cooked with curd and pomegranate (P. granatum) and added with profuse fat should be given in food [20].

The intake of the root bark of Ankot (A. salvifolium) [30] or Tender leaves of Amra (M. indica) and Kapittha (F. limonia.) fruit with rice water in case of diarrhoea [32].

Juice extracted from ripe fruit of Dadima (P. granatum) [28] or Syngava (G. indicum) [30] after heating in a closed vessel checks all types of diarrhoea.

The linctus of Kutaja (H. antidysenterica) mixed with drugs of ambasthadi (group having C. pareira and similar astringent drugs) and Pippalyadi groups (group having P. longum and similar pungent drugs) and honey destroy chronic diarrhoea having profuse mucus and blood [21, 23].

Local application of the paste of Jatiphala (F. benghalensis) on the navel is helpful in checking diarrhoea [27].

The patients are advised to take soup of Badara fruits (Z. jujube) cooked with curd, pomegranate (P. granatum) and sufficient ghee [20]. Furthermore, milk cooked with only Eranda (R. communis) is also effective.

Moreover, gruels processed with Vata (F. benghalensis) alleviating and appetizing drugs should be served [21].

The decoction of Sunthi (Z. officinale) and Kadamba (Anchocephalus chinensis Lamm.; A. Rich. Ex Walp.) bark for three days alleviates diarrhoea [31].

The root bark of Ankot (A. salvifolium) taken with buffalo’s buttermilk [32] or soup of Kasmarya (G. arborea) fruits added with sugar [20, 23] is an efficacious remedy for diarrhoea.

Powder of six herbs viz. Tila (S. indicum), Mocaras (Oleko gum resin obtained from plant S. malabarica), Lodhara (S. racemosa), Samanga (M. pudica), Kamala (N. nucifera) and Upala all combined together should be mixed with honey and taken with rice water. It is useful in diarrhoea caused by pitta [20].

In case of diarrhoea with blood, Indrayava (seed of H. antidysenterica) with barley scum fried with ghee followed by intake of liquid gruel [20].

Trayama (Gentiana kurroo Royle) and Palasa (B. monosperma) may be used in diarrhoea [20, 23].

Vegetable of any of Shati (H. spicatum), Jivanti (L. reticulata) or dried vegetable of Lonika (P. quadrifida) and Patha (C. pareira) cooked with curd and pomegranate (P. granatum) with ample ghee should be given include in diet [20].

Water processed with Dhanvalya (C. sativum) and Balaka should be given to those who suffered from thirst, burning sensation and diarrhoea [26].

Processed drinking water prepared with Hribera (C. vettiveroides) and Sunthi (Z. officinale) should be given to diarrhoea patients [20].

Mustakka (C. rotundus) kshirpaka is prepared with equal amount of milk and reduced to ¼ th amount. This kshirpaka is effective in controlling diarrhoea with mucus and blood [31].

Curd prepare from processed milk is very useful in diarrhoea. First Mustakka (C. rotundus) is crushed and boiled with ¾ th milk letter add water to maintain volume equal to volume of milk used. This processed milk is filtered and curd is prepared with this processed milk [31].

REFERENCE
2. World Health Organization. Integrated global action plan for the prevention and control of pneumonia and diarrhoea (GAPPID) 12 April 2013. (http://www.who.int/topics/diarrhoea/en/) (last accessed 1.01.15)