Introduction
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Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many of the body’s systems, in particular the blood vessels and nerves. The increasing worldwide incidence of diabetes mellitus in adults constitutes a global public health burden. It is predicted that by 2030, India, China and the United States will have the largest number of people with diabetes (Wild et al., 2004). The vast majority of cases of diabetes fall into two broad etiopathogenetic categories. In one category, type 1 diabetes, the cause is an absolute deficiency of insulin secretion. In the other, much more prevalent category type 2 diabetes, the cause is a combination of resistance to insulin action and an inadequate compensatory insulin-secretory response (ADAEC, 1997).

It is a well-established fact that diabetes is a risk factor for cardiovascular disease. While microvascular complications of diabetes include nephropathy and retinopathy, macrovascular complications resulting in atherosclerotic cardiovascular disease such as coronary artery disease, cerebrovascular disease and peripheral vascular disease are the leading cause of death in the diabetic population. The Diabetes Control and Complications trial (DCCT) demonstrated that tight control of blood glucose is effective in reducing clinical complications significantly, but even optimal control of blood glucose could not prevent complications suggesting that alternative treatment strategies are needed. Since numerous studies demonstrated that oxidative stress, mediated mainly by hyperglycemia-induced generation of free radicals, contributes to the development and progression of diabetes and related contributions, it became clear that ameliorating oxidative stress through treatment with antioxidants might be an effective strategy for reducing diabetic complications.

The therapeutic measurements include use of insulin and other agents like amylin analogues, alpha glycosidase inhibitors like acarbose, miglitol and voglibiose, sulphonylureas, biguanides for the treatment of hyperglycemia. These drugs also have certain adverse effects like causing hypoglycemia at higher doses, liver problems, lactic acidosis and diarrhea. Apart from currently available therapeutic options, many herbal medicines have been recommended for the treatment of diabetes. Traditional plant medicines are used throughout the world for a range of diabetic presentations.
Herbal drugs are prescribed widely because of their effectiveness, less side effects and relatively low cost (Venkatesh et al., 2003). Therefore, investigation on such agents from traditional medicinal plants has become more important (Suba et al., 2004). India has a rich history of using various potent herbs and herbal components for treating diabetes. Many Indian plants have been investigated for their beneficial use in different types of diabetes and reported in numerous scientific journals.

*Bryonia laciniosa* syn *Bryonopsis laciniosa* (Cucurbitaceae) locally known as ‘Shivlingi’ and ‘Gargumaru’ is distributed throughout India. It is an annual climber with bright red fruits and is reported to be highly medicinal (Kirtikar and Basu, 1987). Locally in India its seeds are being used for promoting conception in women. It was thought that seeds may be containing some hormone like substance or substances that may help in the secretion of hormones in the human system or may be possessing substance which may be having strengthening effect on uterine muscle (Vaidya, 1952). Ayurvedic literature survey indicated the use of entire plant is bitter tonic, hepatoprotective, antipyretic, laxative and used to correct the metabolic abnormalities. Plant is also used against snake-bite (Kirtikar and Basu, 1987; Whatt, 1972; Chopra et al., 1956; Nadkarni et al., 1927; Anonymous, 1948). Its leaves are used on inflammation (Vaidya, 1952, 1965; Kirtikar and Basu, 1987). Fruits are recommended in liver disease, leucoderma, inflammation and abdominal disease (Vaidya, 1952, 1965; Bamdai, 1940). Fruits are used as blood purifier. Root extract is having diuretic, hepatoprotective and kidney stone removing properties. From leaves, a bitter principle bryonin has been reported (Chopra et al., 1956). From seeds, saponin molecules are identified with the help of TLC and antibacterial, antifungal, anti-inflammatory and diuretic activities have been reported (Saxena et al., 2004).

The innumerable claims reported in favor of *Bryonia laciniosa* are not substantiated by the modern scientific studies. *Bryonia laciniosa* is an Indian species requiring detailed phytochemical and pharmacological investigation to prove or disprove the claims made in the Ayurvedic literature. There are other two species of *Bryonia* reported earlier in the literature. One of the species *Bryonia alba* possess antidiabetic activity (Karageuzyan et al., 1998). The literature search shows absence of any documentation on *Bryonia laciniosa*’s therapeutic effect. Hence, we have selected this plant to evaluate its activity in metabolic disorders viz. diabetes and hyperlipidemia.