

【Summary】

The Function of Terminalia bellirica-Derived Ellagic Acid: Inhibition of Absorption of Dietary Fats and Sugars, Mild Reduction in Postprandial Triglycerides and Blood Glucose Levels, Reduction of Abdominal Fat (Visceral and Subcutaneous) in Individuals with a Tendency Towards Obesity, Assistance in Weight Reduction, and Contribution to Lowering Elevated BMI

【Impact on Postprandial Triglycerides】

■ Title

Effect of Terminalia bellirica-Derived Ellagic Acid on Postprandial Triglycerides

■ Objective

The aim of this study was to investigate whether the ingestion of Terminalia bellirica-derived ellagic acid in healthy adults has the function of inhibiting the rise in postprandial triglycerides compared to a placebo (dummy treatment).

■ Background

Terminalia bellirica-derived ellagic acid has been reported to possess inhibitory effects on fat-degrading enzymes, leading to the suppression of postprandial triglyceride elevation. The purpose is to comprehensively evaluate the function of Terminalia bellirica-derived ellagic acid in inhibiting the rise in postprandial triglycerides.

■ Characteristics of Reviewed Studies

Research papers that evaluated the effects of Terminalia bellirica-derived ellagic acid ingestion on the postprandial blood triglyceride area under the curve (AUC) or postprandial blood triglyceride changes in healthy adults (fasting blood triglyceride levels below 150 mg/dL) were reviewed. After conducting a literature search and scrutinizing the contents of the papers, three studies were selected for review.

※ Area Under the Curve (AUC): A known metric reflecting absorption levels

■ Main Results

All three selected studies were randomized double-blind placebo-controlled trials, indicating high reliability. In healthy adult men and women, the ingestion of Terminalia bellirica-derived ellagic acid at doses of 20.8 mg per serving or 31.4 mg per serving resulted in significant suppression of the change in postprandial blood triglycerides AUC and the change in postprandial blood triglycerides compared to placebo intake after consuming a test meal (containing fats).

■ Quality of Scientific Evidence

The ingestion of Terminalia bellirica-derived ellagic acid at a dose of 20.8 mg per serving in healthy adults demonstrated the ability to inhibit the rise in postprandial triglycerides and suppress the absorption of dietary fats. However, as a limitation of this study, the possibility of unpublished and unreported research cannot be ruled out, causing some doubt on the completeness of information.

【Impact on Postprandial Blood Glucose】

■ Title

Effect of Terminalia bellirica-Derived Ellagic Acid on Postprandial Blood Glucose

■ Objective

The objective of this study was to examine whether the ingestion of Terminalia bellirica-derived ellagic acid in healthy adults has the function of inhibiting the rise in postprandial blood glucose compared to a placebo.

■ Background

Terminalia bellirica-derived ellagic acid has been reported to have inhibitory effects on carbohydrate-degrading enzymes, resulting in the suppression of postprandial blood glucose elevation. The purpose is to comprehensively evaluate the function of Terminalia bellirica-derived ellagic acid in inhibiting the rise in postprandial blood glucose.

■ Characteristics of Reviewed Studies

Research papers that evaluated the effects of Terminalia bellirica-derived ellagic acid ingestion on postprandial blood glucose (evaluated using the postprandial blood glucose AUC) in healthy adults were reviewed. After conducting a literature search and scrutinizing the contents of the papers, three studies were selected for review.

※ Area Under the Curve (AUC): A known metric reflecting absorption levels

■ Main Results

All three selected studies were randomized double-blind placebo-controlled trials, indicating high reliability. In healthy adult men and women, the ingestion of Terminalia bellirica-derived ellagic acid at a dose of 20.8 mg per serving resulted in significant suppression of the change in postprandial blood glucose AUC compared to placebo intake after consuming a test meal (containing carbohydrates).

■ Quality of Scientific Evidence

The ingestion of Terminalia bellirica-derived ellagic acid at a dose of 20.8 mg per serving in healthy adults demonstrated the ability to inhibit the rise in postprandial blood glucose and suppress the absorption of dietary sugars. However, as a limitation of this study, the possibility of unpublished and unreported research cannot be ruled out, causing some doubt on the completeness of information.

【Impact on Visceral Fat, Subcutaneous Fat, and BMI】

■ Title

Effect of Terminalia bellirica-Derived Ellagic Acid on Body Fat

■ Objective

The aim of this study was to verify whether the ingestion of Terminalia bellirica-derived ellagic acid in healthy adults has the function of reducing body fat compared to a placebo.

■ Background

Terminalia bellirica-derived ellagic acid has been reported to reduce visceral fat and body weight. The purpose is to comprehensively evaluate the function of Terminalia bellirica-derived ellagic acid in reducing body fat, a research review was conducted.

■ Characteristics of Reviewed Studies

Research papers that evaluated the effects of Terminalia bellirica-derived ellagic acid ingestion on body fat in healthy adults were reviewed. After conducting a literature search and scrutinizing the contents of the papers, two studies were selected for review.

■ Main Results

Both selected studies targeted overweight healthy adult men and women and evaluated the impact of Terminalia bellirica-derived ellagic acid intake at 41.6 mg per day on abdominal fat area, body weight, BMI, waist circumference, and hip circumference. Meta-analysis of the two studies demonstrated significant reductions in abdominal visceral fat area, abdominal subcutaneous fat area, total abdominal fat area, body weight, and BMI due to Terminalia bellirica-derived ellagic acid ingestion, with effects confirmed at a dose of 41.6 mg per day.

■ Quality of Scientific Evidence

In overweight healthy adults, the ingestion of Terminalia bellirica-derived ellagic acid at a dose of 41.6 mg per day for 12 weeks demonstrated the ability to reduce abdominal fat, body weight, and BMI. However, as a limitation of this study, the small number of adopted studies (2studies) suggests the need for further investigation.