



Complementary and Alternative Medicine: Impact of Consciousness Energy Healing Treatment on the Cholecalciferol (Vitamin D₃)

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Received: 📅 January 29, 2019

Published: 📅 February 20, 2019

Abstract

Cholecalciferol is a steroid hormone (7-dehydroxycholesterol), which helps in the absorption of dietary minerals like zinc, calcium, magnesium, iron, and phosphate and also responsible for other biological activity. In this research study, the influence of the Trivedi Effect®-Consciousness Energy Healing Treatment on the physicochemical and thermal properties of cholecalciferol was evaluated using the modern analytical technique. The cholecalciferol test sample was divided into two parts. One of the test samples was considered as a control sample, which did not receive the Biofield Energy Treatment; whereas, the other part was treated with the Consciousness Energy Healing Treatment remotely by a well-known Biofield Energy Healer, Gopal Nayak and termed as a treated sample. The particle size values in the treated cholecalciferol powder sample were significantly decreased by 78.94% (d_{10}), 26.21% (d_{50}), 22.01% (d_{90}), and 29.04% {D (4,3)}; thus, the specific surface area of the treated cholecalciferol was significantly increased by 174.12% compared to the control sample. The XRD peak intensities and crystallite sizes of the treated cholecalciferol powder sample were significantly altered ranging from -44.37% to 370.49% and -74.48% to 91.52%, respectively; therefore, the average crystallite size of the treated cholecalciferol was significantly decreased by 36.21% compared to the control cholecalciferol. The latent heat of fusion of the treated cholecalciferol was significantly increased by 25.89% compared to the control cholecalciferol. The weight loss was decreased by 1.48%; whereas, the residue amount was significantly increased by 107.02% in the treated sample compared with the control sample. Thus, the Trivedi Effect®-Consciousness Energy Healing Treatment generated a new polymorphic form of cholecalciferol which might offer better solubility, absorption, bioavailability, and be thermally more stable compared with the control sample. Henceforth, the Consciousness Energy Healing Treated cholecalciferol would be more beneficial to maintain the overall quality of life and it would be more useful in designing novel nutraceutical/pharmaceutical formulations for the better therapeutic responses against deficiency of vitamin D, osteoporosis, rickets, cardiovascular diseases, diabetes mellitus, cancer, mental disorders, multiple sclerosis, etc.

Keywords: Complementary and Alternative Medicine; Vitamin D₃; The Trivedi Effect®; Consciousness Energy Healing Treatment; Particle size; Surface area; PXRD; DSC; TGA/DTG

Introduction

Vitamin D₃ (cholecalciferol or 7-dehydroxycholesterol) is a steroid hormone produced in the skin once exposed to ultraviolet light and also obtained from dietary sources. It is a fat-soluble vitamin helps in the absorption of the dietary minerals like zinc, calcium, magnesium, iron, and phosphate and responsible for other biological activity, i.e., maintain healthy immune, skeletal, cardiovascular, and reproductive systems [1-3]. The major dietary sources of vitamin D are the cod liver oil, fatty fish like salmon

and tuna, milk, nutraceutical and pharmaceutical supplements [2]. It is used for the prevention and treatment of several diseases like hypovitaminosis D, rickets, osteoporosis, diabetes mellitus, cardiovascular diseases, mental disorders, infections, cancer, multiple sclerosis, etc. [4-6]. Cholecalciferol nutritional deficiency mostly under-diagnosed and under-treated is pandemic all over the world [7]. The 1,25-Dihydroxycholecalciferol is the biologically active form of cholecalciferol known as calcitriol [5-

7]. The overdosing of cholecalciferol can be the cause of vomiting, constipation, hypercalcemia, polyuria, polydipsia, insomnia, confusion, kidney stone, weakness, and mental retardation [1].

The bioavailability of cholecalciferol is very poor. Similarly, some of the other factors that directly affect the bioavailability of cholecalciferol are dietary fiber, genetic factors, and cholecalciferol status [8,9]. The stability, solubility, and bioavailability of cholecalciferol are the major concern for the storage and nutraceutical/pharmaceutical formulations point of views, as it is insoluble to water and sensitive to the light and air [10,11]. The pharmaceutical and nutraceutical scientists are working hard for the improvement of physicochemical properties of the compounds for better dissolution, absorption, and bioavailability in the body [12]. In this concern, the Consciousness Energy Healing Treatment (the Trivedi Effect®) has been proved experimentally that, it has a substantial impact on various physicochemical properties and also bioavailability of nutraceutical and pharmaceutical entities [13-16]. The Trivedi Effect® is natural and only proven scientific phenomenon in which a specialist can harness this intelligent energy from the "Universe" and transfer it anywhere on the planet through the possible mediation of neutrinos [17]. Around the body of every living organism an infinite and para-dimensional unique electromagnetic field exists created from the continuous moment of the charged particles like ions, cells, blood, etc. is called a "Biofield". The Biofield Energy Therapies have been reported with significantly beneficial outcomes against various disease [18]. The National Center for Complementary and Alternative Medicine (NCCAM) and the National Institutes of Health (NIH) have recommend and included the Energy therapy under the Complementary and Alternative Medicine (CAM) along with other therapies, i.e., homeopathy, acupuncture, Ayurvedic medicine, naturopathy, acupressure, Tai Chi, Qi Gong, Reiki, hypnotherapy, etc. The CAM has been accepted by most of the USA population [19,20]. On the other hand, the Consciousness Energy Healing Treatment (the Trivedi Effect®) has gained popularity all over the world and reported with the substantial impact on the physicochemical and behavioural properties of metals, ceramics, polymer, organic compounds, microorganisms, cancer cells, crops, etc. [21-31]. In this study the impact of the Trivedi Effect®-Consciousness Energy Healing Treatment on the physicochemical and thermal properties of cholecalciferol was evaluated using particle size analysis (PSA), powder X-ray diffraction (PXRD), differential scanning calorimetry (DSC), and differential thermogravimetric analysis (DTG)/thermogravimetric analysis (TGA).

Materials and Methods

Chemicals and Reagents

The cholecalciferol powder sample (> 98%) was purchased from Sigma-Aldrich, India and reaming chemicals were of analytical grade purchased in India.

Consciousness Energy Healing Treatment Strategies

The test sample vitamin D₃ was equally divided into two parts. One part of the vitamin D₃ sample was received the Consciousness Energy Healing Treatment (the Trivedi Effect®) remotely provided standard laboratory conditions for 3 minutes by a well-known Biofield Energy Healer, Gopal Nayak, India, known as a Biofield Energy Treated sample. Though, the second part of vitamin D₃ sample did not receive the Consciousness Energy Healing Treatment but treated with a "sham" healer called as a control sample. The "sham" healer doesn't know anything about the Biofield Energy Treatment. After the treatment, both the samples were kept in sealed conditions and characterized using modern analytical techniques.

Characterization

The PSA of vitamin D₃ was performed using Malvern Mastersizer 2000 (the UK) using the wet method [32,33]. The PXRD analysis of vitamin D₃ powder sample was performed with the help of Rigaku Mini Flex-II Desktop X-ray diffractometer (Japan) [34,35]. The crystallites size was calculated from XRD data using the Scherrer's formula (1)

$$G = k\lambda / \beta \cos\theta \quad (1)$$

Where k is the equipment constant, G is the crystallite size in nm, λ is the radiation wavelength, β is the full-width at half maximum, and θ is the Bragg angle [36,37].

Similarly, the DSC analysis of vitamin D₃ was performed with the help of DSC Q200, TA instruments. The TGA/DTG thermograms of vitamin D₃ were obtained with the help of TGA Q50 TA instruments [32,33]. The % change in particle size, specific surface area, peak intensity, crystallite size, latent heat, melting point, weight loss and the maximum thermal temperature of the Biofield Energy Treated vitamin D₃ was calculated compared with the control vitamin D₃ using the following equation 2:

$$\% \text{ change} = \frac{[Treated - Control]}{Control} \times 100 \quad (2)$$

Results and Discussion

Particle Size Analysis (PSA)

The particle sizes of the control and Biofield Energy Treated cholecalciferol were analyzed, and the data are presented in Table 1. The particle size values in the treated cholecalciferol were significantly decreased by 78.94%, 26.21%, 22.01%, and 29.04% at d_{10} , d_{50} , d_{90} , and D (4,3), respectively compared to the control cholecalciferol. Therefore, the specific surface area of the Biofield Energy Treated cholecalciferol (0.0625 m²/g) was significantly increased by 174.12% compared to the control sample (0.0228 m²/g). The results indicated that the Trivedi Effect®-Consciousness Energy Healing Treatment supposed to act as an external force for

breaking the larger particles of cholecalciferol to smaller one; hence increased the surface area. The particle properties (size, shape, and surface area) of a drug molecule have a significant impact on the solubility, absorption, bioavailability, and the therapeutic efficacy [12, 38]. As cholecalciferol is a lipophilic compound and

the solubility of it is very poor in water accountable for the poor bioavailability in the body [8,9]. The Consciousness Energy Healing Treated cholecalciferol may show better solubility, absorption, and therapeutic efficacy in the body.

Table 1: Particle size distribution of the control and Biofield Treated cholecalciferol.

| Parameter | d10 (µm) | d50 (µm) | d90 (µm) | D (4,3) (µm) | SSA (m ² /g) |
|--------------------|----------|----------|----------|--------------|-------------------------|
| Control | 225.62 | 544.63 | 1049.82 | 595.08 | 0.0228 |
| Biofield Treated | 47.52 | 401.9 | 818.76 | 422.26 | 0.0625 |
| Percent change (%) | -78.94 | -26.21 | -22.01 | -29.04 | 174.12 |

Powder X-Ray Diffraction (PXRD) Analysis

The PXRD diffractograms of both the samples showed sharp and intense peaks (Figure 1), indicated that both the samples were crystalline. The control and Biofield Energy Treated cholecalciferol samples showed the highest peak intensity at 2θ equal to 17.76° and 17.97° in the powder XRD diffractograms (Table 2). The peak intensities of the treated cholecalciferol were significantly altered ranging from -44.37% to 370.49% compared to the control sample. Similarly, the crystallite sizes of the treated cholecalciferol sample were significantly altered ranging from -74.48% to 91.52% compared to the control sample. Largely, the average crystallite size of the Biofield Energy Treated cholecalciferol (246.75 nm) was significantly decreased by 36.21% compared with the control

sample (386.8 nm). The change in the peak intensity of the crystalline compound indicated the alterations in the crystal morphology [38]. The alterations in the powder XRD pattern provide the proof of polymorphic transitions [39,40]. The Trivedi Effect®-Consciousness Energy Healing Treatment assumed to be responsible for the new polymorphic form of cholecalciferol probably through the Consciousness Energy via neutrino oscillations [17]. The drug performance, i.e., bioavailability, therapeutic efficacy, and toxicity of the pharmaceutical compound would be different from the original one due to different polymorphic forms [41-43]. Hence, the Consciousness Energy Healing Treated sample would be more efficacious novel pharmaceutical/nutraceutical formulations for the treatment of cholecalciferol deficiency disease.

Table 2: PXRD data for the control and Biofield Energy Treated cholecalciferol.

| Entry No. | Bragg angle (°2q) | | Peak Intensity (%) | | | Crystallite size (G,nm) | | |
|-----------|--------------------------|---------|--------------------|---------|----------|-------------------------|---------|----------|
| | Control | Treated | Control | Treated | % change | Control | Treated | % change |
| 1 | 5.01 | 5.24 | 2114 | 1278 | -39.55 | 525 | 134 | -74.48 |
| 2 | 6.82 | 6.8 | 168 | 425 | 152.98 | 743 | 514 | -30.82 |
| 3 | 8.73 | 8.62 | 298 | 299 | 0.34 | 126 | 137 | 8.73 |
| 4 | 13.67 | 13.51 | 234 | 364 | 55.56 | 251 | 254 | 1.2 |
| 5 | 15.18 | 15.59 | 627 | 2950 | 370.49 | 212 | 93.5 | -55.9 |
| 6 | 17.76 | 17.97 | 1593 | 1392 | -12.62 | 165 | 316 | 91.52 |
| 7 | 18.15 | 18.2 | 358 | 496 | 38.55 | 991 | 396 | -60.04 |
| 8 | 21.54 | 21.62 | 161 | 496 | 208.07 | 341 | 167 | -51.03 |
| 9 | 23.67 | 23.82 | 302 | 168 | -44.37 | 357 | 195 | -45.38 |
| 10 | 26.8 | 26.76 | 40 | 80 | 100 | 157 | 261 | 66.24 |
| 11 | Average crystallite size | | | | | 386.8 | 246.75 | -36.21 |

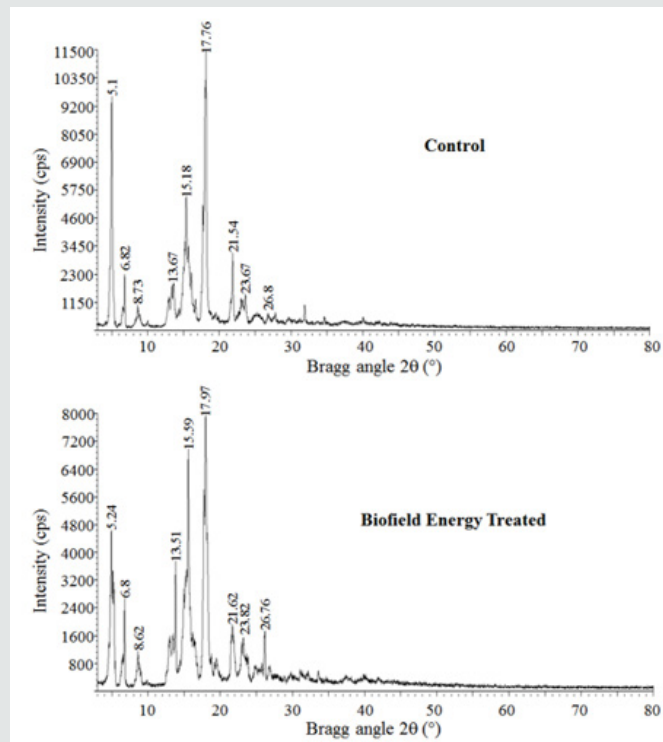


Figure 1: PXRD diffractograms of the control and Biofield Energy Treated cholecalciferol.

Differential Scanning Calorimetry (DSC) Analysis

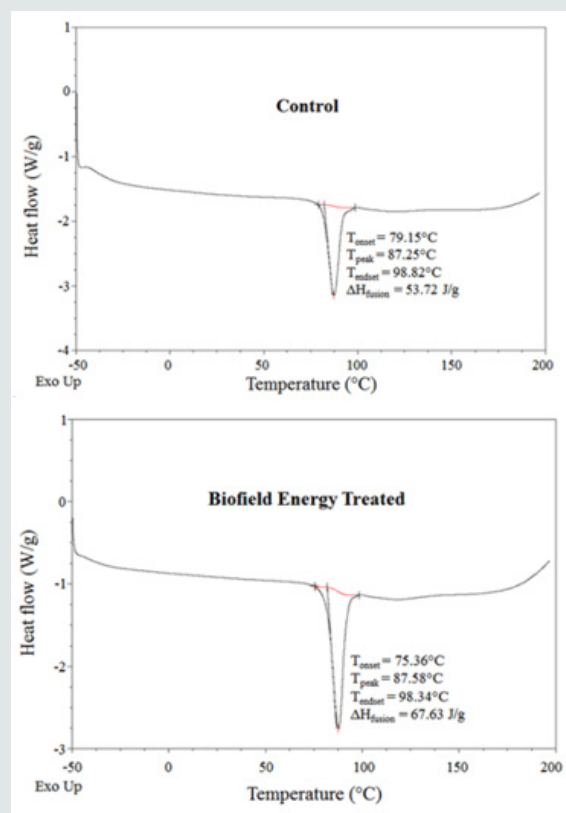


Figure 2: DSC thermograms of the control and Biofield Energy Treated cholecalciferol.

The cholecalciferol control and treated samples showed the sharp endothermic peak in the thermograms (Figure 2). The literature data closely match the experimental results [42]. The melting point and latent heat of fusion (ΔH_{fusion}) of the Biofield Energy Treated cholecalciferol were increased by 0.38% and 25.89%, respectively compared with the control sample (Table 3).

Table 3: DSC data for the control and Biofield Treated cholecalciferol.

| Sample | Melting Temp (°C) | ΔH_{fusion} (J/g) |
|-------------------------|-------------------|----------------------------------|
| Control Sample | 87.25 | 53.72 |
| Biofield Energy Treated | 87.58 | 67.63 |
| % Change | 0.38 | 25.89 |

Thermal Gravimetric Analysis (TGA) / Differential Thermogravimetric Analysis (DTG)

The control and Biofield Energy Treated samples showed one step of thermal degradation (Figure 3). The weight loss of the Biofield Energy Treated cholecalciferol was decreased by 1.48%; whereas, the residue amount was significantly increased by 107.02% compared to the control sample (Table 4). Similarly, the

The change in the latent heat of fusion can be directly related to the disrupted intrinsic molecular chain and the crystal structure [43]. As per the result the thermal stability of the Consciousness Energy Healing Treated cholecalciferol was improved compared to the thermal stability of the control sample.

control and Biofield Energy Treated cholecalciferol showed one peak of maximum thermal degradation temperature (T_{max}) in the thermograms (Figure 4). The T_{max} of the treated sample (292.01°C) was increased by 0.74% compared to the control sample (289.87°C). Overall, thermal analysis data of cholecalciferol samples indicated that the thermal stability of the Biofield Energy Treated sample was increased compared with the control sample.

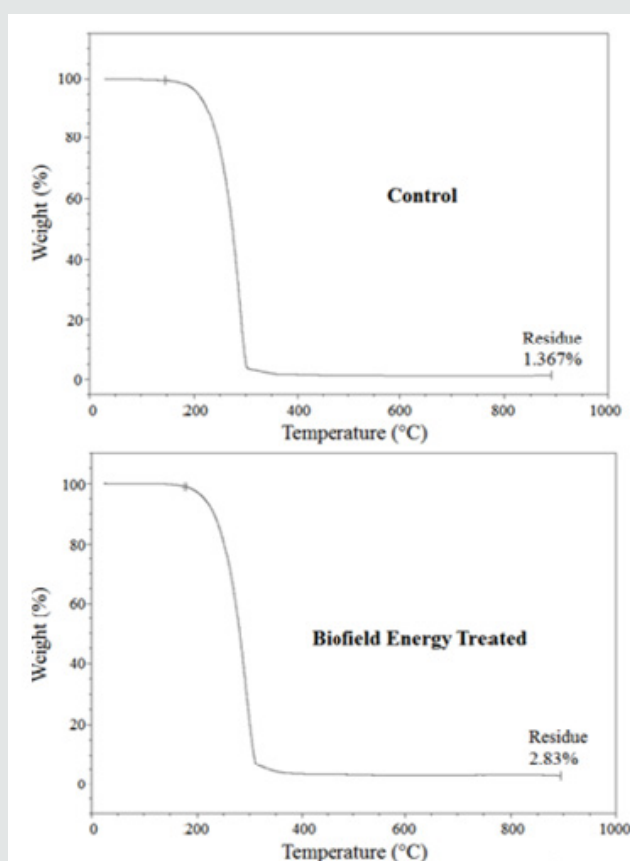


Figure 3: TGA thermograms of the control and Biofield Energy Treated cholecalciferol.

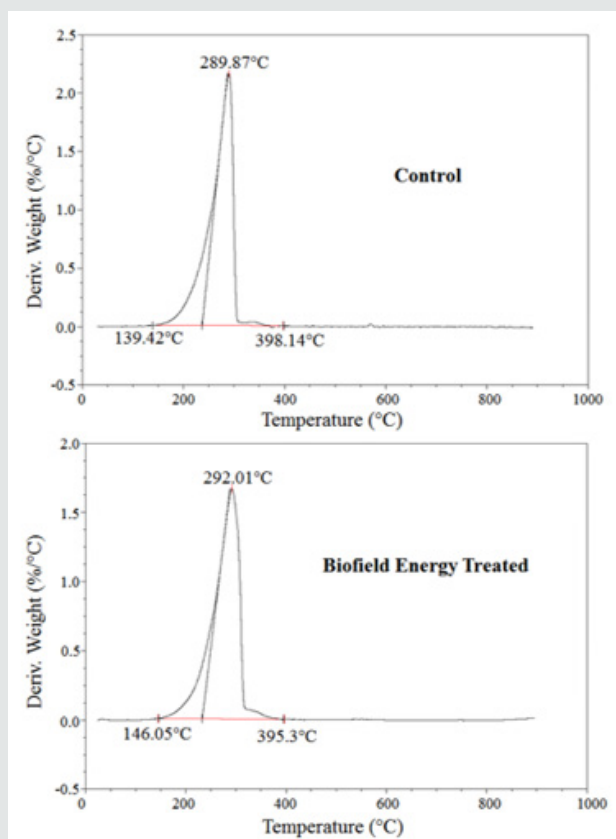


Figure 4: DTG thermograms of the control and Biofield Energy Treated cholecalciferol.

Table 4: TGA/DTG data of the control and Biofield Treated cholecalciferol.

| Sample | TGA | | DTG |
|-------------------------|-----------------------|-----------|-----------------------|
| | Total weight loss (%) | Residue % | T _{max} (°C) |
| Control | 98.63 | 1.37 | 289.87 |
| Biofield Energy Treated | 97.17 | 2.83 | 292.01 |
| % Change | -1.48 | 107.02 | 0.74 |

Conclusions

The Consciousness Energy Healing Treatment (the Trivedi Effect®) has shown the significant effects on the particle and crystallite size, surface area, peak intensity, and thermal behavior of cholecalciferol. The particle size values in the Biofield Energy Treated cholecalciferol powder sample were significantly decreased by 78.94% (d_{10}), 26.21% (d_{50}), 22.01% (d_{90}), and 29.04% {D (4,3)}; thus, the specific surface area of the Biofield Energy Treated cholecalciferol was significantly increased by 174.12% compared to the control cholecalciferol. The powder XRD peak intensities and crystallite sizes of the Biofield Energy Treated cholecalciferol powder sample were significantly altered ranging from -44.37% to 370.49% and -74.48% to 91.52%, respectively; therefore, the average crystallite size of the Biofield Energy Treated sample was significantly decreased by 36.21% compared with the control sample. The ΔH fusion of the Biofield Energy Treated cholecalciferol was significantly increased by 25.89% compared to

the control cholecalciferol. The total weight loss was decreased by 1.48%; whereas, the residue amount was significantly increased by 107.02% in the Biofield Energy Treated sample compared with the control sample. Thus, the Trivedi Effect®-Consciousness Energy Healing Treatment generated a new polymorphic form of cholecalciferol which might offer better solubility, absorption, bioavailability, and be thermally more stable compared with the control sample. Henceforth, the Consciousness Energy Healing Treated cholecalciferol would be more beneficial to maintain the overall quality of life and it would be more useful in designing novel nutraceutical/pharmaceutical formulations for the better therapeutic responses against deficiency of vitamin D, osteoporosis, rickets, cardiovascular diseases, diabetes mellitus, cancer, mental disorders, multiple sclerosis, etc.

Acknowledgements

The authors are grateful to Central Leather Research Institute, SIPRA Lab. Ltd., Trivedi Science, Trivedi Global, Inc., Trivedi

Testimonials, and Trivedi Master Wellness for their assistance and support during this work.

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