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Research Article

Effects of Clonapure® Supplementation on Intermittent Aerobic Capacity and Explosive Power in Elite Female Volleyball Players

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Abstract

Background: Creatine supplementation has long been established as a performance-enhancing strategy in power and strength-based sports. However, evidence in elite female athletes and in volleyball-specific contexts remains limited. Clonapure® is a novel creatine formulation containing creatine monohydrate, creatine phosphate, and phosphate, designed to optimize cellular uptake and metabolic synergy. *Methods:* In this randomized, double-blind, placebo-controlled pilot trial, 16 elite female volleyball players were randomized to receive either Clonapure® or placebo over 28 days. Performance was assessed at three timepoints: T0 (Day 1), T1 (Day 7), and T2 (Day 28). Primary outcomes included the Volleyball Intermittent Endurance Test (VIET), Intermittent Vertical Jump Test (IVJT), and Continuous Vertical Jump Test (CVJT). Quality indicators such as jump count and jump height were also recorded. *Results:* No adverse events or dropouts were reported. At T2, the Clonapure® group showed significantly improved aerobic endurance, with greater total distance covered in the VIET compared to placebo ($p<0.001$). In the IVJT, the Clonapure® group demonstrated early and sustained improvements in peak power (PP), mean power (MP), and fatigue index (FI), with statistical significance achieved for all variables by T2 (PP: $p = 0.023$; MP: $p = 0.026$; FI: $p = 0.002$). The CVJT revealed a similar trend, with significant enhancements in MP and FI at T2. Vertical jump quality indicators (NVJ60sec and VJ60sec) also showed significant improvements in the Clonapure® group across T1 and T2. NVJ15sec remained unchanged, while VJ15sec showed mild but consistent gains. *Conclusion:* Clonapure® supplementation over 28 days significantly enhanced both sport-specific endurance and neuromuscular performance in elite female volleyball players. These effects likely reflect improved phosphocreatine resynthesis, enhanced buffering capacity, and superior maintenance of explosive output during repeated high-intensity efforts. The findings support Clonapure® as a safe and effective ergogenic aid in elite-level, intermittent sport contexts such as volleyball.

Keywords

Creatine, Clonapure®, Supplements, Performance, Training

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1. Introduction

Creatine is a nitrogenous organic compound endogenously synthesized from the amino acids glycine, arginine, and methionine, and predominantly stored in skeletal muscle as free creatine and phosphocreatine [1]. The phosphocreatine (PCr) system serves as a critical buffer for rapid ATP resynthesis during short-duration, high-intensity muscular efforts, making creatine supplementation a well-established ergogenic strategy in anaerobic-dominant sports. The International Society of Sports Nutrition (ISSN) classifies creatine monohydrate as one of the most effective nutritional supplements for its capacity to improve high-intensity intermittent performance, power output, and resistance to neuromuscular fatigue [2].

Volleyball is characterized by a high frequency of explosive lower-limb actions including spikes, jumps, and blocks, that rely heavily on the anaerobic alactic (ATP-PCr) energy system, particularly during repeated maximal efforts interspersed with short recovery periods. Viitasalo et al. demonstrated that the phosphagen system dominates energy production during these sport-specific actions [3].

Thus, creatine's role in enhancing phosphocreatine resynthesis translates directly into improved performance and recovery in volleyball-specific movements. Despite the abundance of literature on creatine use in male athletes, studies involving elite female volleyball players remain scarce, although existing evidence supports similar efficacy across sexes [4]. Given the metabolic and biomechanical demands of professional volleyball, particularly in female athletes subject to hormonal fluctuations (e.g. estrogen and progesterone, which can modulate neuromuscular efficiency and substrate utilization) that may influence muscle metabolism, investigating the effects of Clonapure® supplementation represents a compelling direction in applied sports science.

Clonapure® is an innovative ingredient, manufactured by a patent pending process containing creatine monohydrate, creatine phosphate, and phosphate in a specific stichiometric ratio. Clonapure® is designed to optimize creatine bioavailability and intracellular retention, as well as to enhance the buffering of lactic acid and facilitate more efficient ATP turnover. Preliminary studies suggest superior absorption kinetics and a greater impact on muscular power output compared to standard creatine monohydrate alone. Moreover, phosphate may contribute to improve the utilization of phosphate from bloodstream and mitochondrial efficiency during intermittent effort, while creatine phosphate may directly support immediate phosphagen replenishment.

Therefore, the purpose of this study was to investigate the effects of a 28-day Clonapure® supplementation on volleyball-specific performance metrics, including intermittent endurance, maximal vertical jump capacity, and repeated explosive strength in elite female volleyball athletes.

2. Materials and Methods

2.1. Study Design and Participants

A randomized, double-blind, placebo-controlled, parallel-group pilot study was conducted over a 28-day intervention period. Sixteen elite female volleyball players (mean age: 24.6 ± 2.9 years; height 185.6 ± 6.2 cm; body mass of 77.8 ± 5.5 kg) from a professional Serie A team (UYBA Busto Volley) were enrolled. Inclusion criteria included active participation in national-level competition, regular training (>5 sessions/week), and no history of creatine supplementation in the past 3 months. Exclusion criteria included recent injury, metabolic or endocrine disorders, or use of performance-enhancing supplements.

Participants were randomly allocated to either the Clonapure® group (n = 8) or placebo group (n = 8) using a computer-generated sequence. All participants provided written informed consent. The study was conducted in accordance with the Declaration of Helsinki.

2.2. Supplementation

Players in the intervention group received Clonapure®, containing micronized creatine monohydrate, creatine phosphate, and phosphate. The dosing regimen followed a three-phase structure:

1) Loading phase (Days 1-4): 5 g x 4 servings/day, every 3 hours
2) Taper phase (Days 5-6): 5 g x 2 servings/day, every 3 hours
3) Maintenance phase (Days 7-28): 5 g x 1 serving/day, administered post-training

Clonapure® was kindly supplied by Florida Human Nutrition Corp, Miami FL.

The placebo group received an isocaloric, flavor-matched powder devoid of active creatine. Both treatments were provided in identical packaging to maintain blinding. All supplements were consumed under assessmment and supervision of the nutritionist during team training sessions.

2.3. Efficacy Assessment

Performance outcomes were assessed at three time points: baseline (T0, Day 1), intermediate (T1, Day 7), and final (T2, Day 28). However, the Volleyball Intermittent Endurance Test (VIET) was administered exclusively at T0 and T2, in order to capture pre- and post-intervention changes in intermittent aerobic capacity without introducing learning or fatigue effects at the intermediate checkpoint (Figure 1).

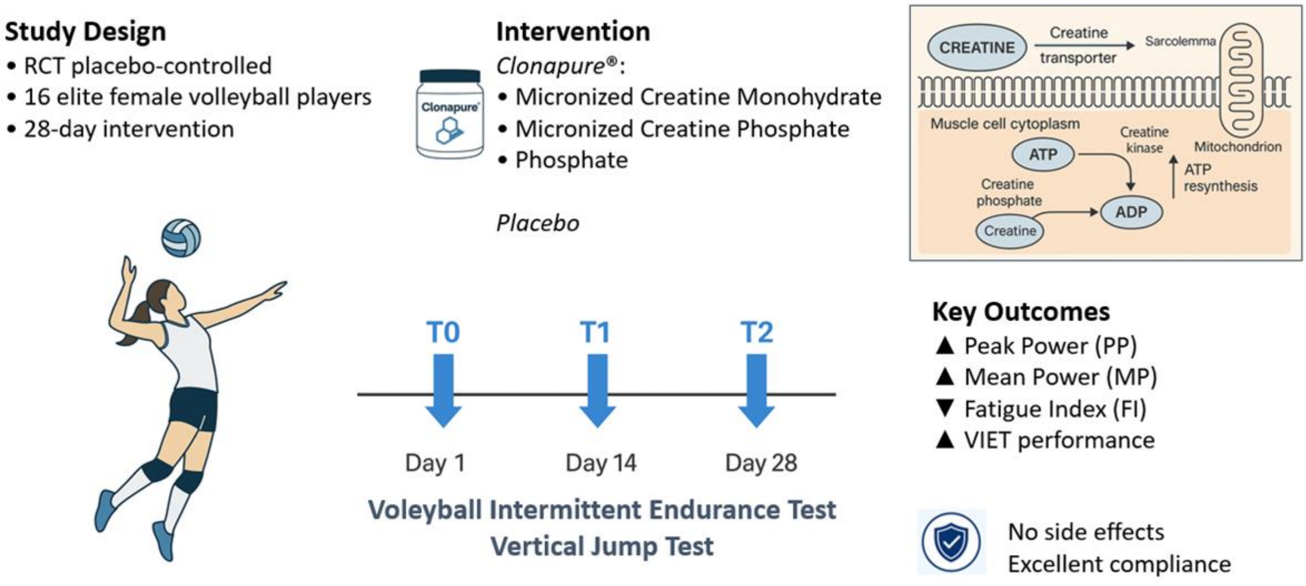

Figure 1. Study design.

The following outcome measures were evaluated:

1) Volleyball Intermittent Endurance Test (VIET) which is a sport-specific, incremental shuttle test assessing intermittent aerobic endurance capacity. The final score was based on the total distance covered (in meters) until volitional exhaustion.
2) Intermittent Vertical Jump Test (IVJT) which evaluates explosive strength-endurance over four 15-second jump intervals with 10-second rests.
3) Continuous Vertical Jump Test (CVJT) which measures performance during 60 seconds of uninterrupted maximal jumps.

Both jump-based protocols (IVJT and CVJT) were administered at T0, T1, and T2, enabling evaluation of acute and cumulative neuromuscular adaptations to the intervention.

The timeline of the study is described in detail in Figure 2.

T0 = day 1
Starting treatment
Check-up test

→

T1 = day 7
Check-up test

→

T2 = day 28
Final test
End of treatment

Figure 2. Study timeline.

2.4. Equipment and Anthropometric Measurements

To evaluate explosive strength endurance, a contact mat system integrated with a digital timer was used. The configuration followed the same operating principles as the Bosco Ergojump® platform enabling the estimation of jump height, mechanical power, and fatigue-related parameters with high temporal resolution.

2.5. Explosive Strength Endurance Testing

Performance in vertical jump-based tests was assessed using two validated protocols [3].

Intermittent Vertical Jump Test (IVJT): The protocol consisted of four 15-second bouts of maximal-effort vertical jumps with 10-second rest intervals between sets. The assessment included:

1) Peak Power (PP), calculated from the first set of jumps.
2) Mean Power (MP): based on total mechanical work across all sets.
3) Fatigue Index (FI): derived as the relative decline in power from the first to the last set, expressed as a percentage.

Continuous Vertical Jump Test (CVJT): Athletes performed 60 seconds of continuous maximal-effort vertical jumps without rest. The same performance parameters (PP, MP, FI) were extracted, with calculations adjusted for continuous execution.

All power-related values were expressed in watts per kilogram (W/kg), using the formulas established by Bosco et al. for countermovement jumps (CMJ) [4]. Both protocols employed the no-arm-swing technique, with jumps initiated from a knee flexion angle of ~110°, considered optimal for force generation [5].

Anthropometric evaluations were carried out to characterize the sample and included standing height and body mass. Stature was measured using a calibrated stadiometer. Body mass was measured using a high-precision electronic scale (KERN®, Germany), compliant with the NAWI 2014/31/EU directive and calibrated according to DAkkS standards, ensuring metrological traceability to international norms and following standard anthropometric procedures [6].

The Volleyball Intermittent Endurance Test (VIET) is a volleyball-specific aerobic capacity assessment, designed to replicate the high-intensity, intermittent movement patterns characteristic of competitive match play. The protocol consists of repeated shuttle runs over a 20-meter distance, performed at incrementally increasing speeds interspersed with short active recovery intervals. The initial velocity is set at 8.0 km h^{-1}, increasing by 0.5 km h^{-1} every minute. Each stage includes a 20-meter shuttle effort followed by 10 seconds of active rest. The test continues until volitional exhaustion or the inability to maintain the required pace for two consecutive stages. Performance is quantified by the number of completed 20-meter shuttle runs, expressed as total shuttles performed until exhaustion. This protocol has demonstrated high construct validity, showing strong correlations with maximal aerobic power (VO_2max) and treadmill-derived peak speed ($r > 0.89$), and exhibits excellent test-retest reliability (ICC = 0.96) for performance monitoring in elite volleyball populations [7, 8].

2.6. Test Administration and Warm-Up

Testing sessions were conducted inside the team's training facility under standardized conditions. Athletes were instructed to abstain from strenuous physical activity in the 24 hours preceding each test session. Prior to testing, a 15-minute standardized warm-up was completed, including general mobilization, light aerobic activity, plyometric drills, two sets of five submaximal vertical jumps.

For both IVJT and CVJT tests, participants performed three initial familiarization jumps; if a subject failed to reach 95% of their recorded maximal jump height, the trial was repeated after 60 seconds of recovery to ensure maximal effort. During the continuous jump test, participants were instructed to perform successive counter movement jumps at maximal voluntary intensity without interspersed rest periods. To standardize biomechanical execution and minimize measurement variability, subjects maintained an erect trunk alignment, avoided anterior trunk displacement, sustained full knee extension during the flight phase, and kept both hands placed on the iliac crests throughout the entire protocol.

All jump-related parameters (CMJ height, PP, MP, FI) demonstrated high test-retest reliability in previous validation studies [9], with intraclass correlation coefficients (ICCs) > 0.98. This reliability has been documented in both continuous and intermittent vertical jump assessments performed in volleyball players.

2.7. Assessment of Safety and Tolerability

Tolerability and safety were assessed using continuous monitoring over the period of treatment to detect any adverse events and evaluate the clinical safety of the supplement. Treatment compliance and the occurrence of adverse effects were monitored using a diary sheet organized on tables with the possibility for patients to indicate their assumptions of whether they were undergoing nutraceutical treatment and eventual side effects.

2.8. Statistical Analysis

Physiological anamnesis was only collected at the enrolment visit (T − 0), and treatment compliance data were collected in T1 and T2.

All statistical analyses were conducted using GraphPad Prism 8. Data are presented as mean ± standard deviation (SD). Normality of distribution was assessed using the Shapiro-Wilk test. To examine the effects of treatment over time, a two-way repeated measures ANOVA (group × time) was performed, followed by Bonferroni-adjusted post hoc tests when appropriate. Significant group × time interactions were further explored with independent-sample t-tests at each time point (T0, T1, T2).

Within-group changes over time were assessed using paired-sample t-tests. For variables that violated normality assumptions, non-parametric alternatives (Wilcoxon signed-rank or Mann-Whitney U tests) were applied. Statistical significance was set at $p < 0.05$.

3. Results

Anthropometric parameters showed no statistically significant differences between groups at T0, which corresponded to the first day of Clonapure® or placebo administration. Body mass remained stable throughout the study period in both arms (Placebo: 77.4 ±5.6 to 77.2 ±5.7 kg; Clonapure®: 78.2 ± 5.4 to 77.9 ± 5.3 kg) (Table 1). In the Volleyball Intermittent Endurance Test (VIET), performance at T0 was similar between groups. However, at T2 (Day 28), the Clonapure® group exhibited a significantly higher number of completed 20-meter shuttles (26.5 ± 1.2 vs. 23.4 ± 1.6; $p<0.001$), suggesting a marked enhancement in intermittent aerobic capacity (Table 2).

With regard to the Intermittent Vertical Jump Test (IVJT), power parameters (peak and mean) showed no significant group differences at T0. Fatigue Index (FI), was lower in the Clonapure® group already at T0, despite that not significantly, p-value indicated a trend toward pre-existing differences ($p = 0.059$). At T1, improvements were detected in all three IVJT metrics in the Clonapure® group (PP: $p = 0.019$; MP: $p = 0.016$; FI: $p = 0.055$). These effects became more pronounced by T2, with statistically significant enhancements in PP, MP and FI (p = 0.023, p = 0.026, and =0.02 respectively).

Results from the Continuous Vertical Jump Test (CVJT) followed a similar trend. At T0, all values were comparable. By T1, FI showed a trend toward significance (p = 0.056). At T2, PP, MP, and FI all reached statistical significance (PP: p = 0.0014; MP: p = 0.02; FI: p = 0.003), indicating cumulative neuromuscular adaptation over the course of the supplementation.

In terms of jump quality indicators, the number of vertical jumps during 15 seconds (NVJ15sec) did not significantly differ between groups at any timepoint. However, total jumps during the 60-second test (NVJ60sec) were already significantly greater in the Clonapure® group at T0 (p = 0.018) and continued to improve at T1 and T2 (both p < 0.001). Average jump height during the first 15 seconds (VJ15sec) showed mild improvement in the Clonapure® group at T1 (p = 0.007), and at T2 (p=0.006). Conversely, average jump height across 60 seconds (VJ60sec) showed consistent significant improvement in the Clonapure® group at T1 (p = 0.003) and T2 (p = 0.012), supporting better preservation of jump mechanics over time under fatigue.

No safety concerns emerged during the trial. No adverse gastrointestinal symptoms or muscular complaints were recorded, and no participant reported missed doses or discontinued treatment.

Table 1. *Baseline Characteristics of the Study Population.*

Parameter	Placebo (n=8)	Clonapure (n=8)	P value
Age (years)	24.5 ±2.7	24.6 ±3.1	0.95
Height (cm)	185.4 ±6.3	185.7 ±6.2	0.92
Body Mass (kg) - T0	77.4 ±5.6	78.2 ±5.4	0.78
Body Mass (kg) - T1	77.3 ±5.6	78.0 ±5.3	0.80
Body Mass (kg) - T2	77.2 ±5.7	77.9 ±5.3	0.80

Table 2. *Performance in the Volleyball Intermittent Endurance Test (VIET) Expressed as Number of 20-m Shuttle Runs Completed.*

Timepoint	Placebo (n=8)	Clonapure (n=8)	P value
T0	22.9 ±1.5	23.1 ±1.3	0.80
T2	23.4 ±1.6	26.5 ±1.2 ***	< 0.001

Data are expressed as the number of completed 20-meter shuttle runs until volitional exhaustion. The asterisks indicate the statistical significance vs Placebo: P < 0,05 (*); P < 0,01 (**); P < 0,001 (***).

Table 3. *Intermittent Vertical Jump Test (IVJT): Performance Outcomes.*

Timepoint	Parameter	Placebo (n=8)	Clonapure (n=8)	P value
T0	PP (W/kg)	20.0 ±1.1	20.9 ±0.9	0.094
T1	PP (W/kg)	20.1 ±1.3	21.7 ±1.1 *	0.019
T2	PP (W/kg)	20.4 ±1.2	21.8 ±1.0 *	0.023
T0	MP (W/kg)	18.2 ±1.4	18.9 ±1.2	0.30
T1	MP (W/kg)	18.2 ±1.3	19.9 ±1.2*	0.016
T2	MP (W/kg)	18.6 ±1.3	20.1 ±1.1 *	0.026
T0	FI (%)	12.4 ±2.1	10.3 ±2.0	0.059
T1	FI (%)	12.1 ±2.3	9.9 ±1.9	0.055

Timepoint	Parameter	Placebo (n=8)	Clonapure (n=8)	P value
T2	FI (%)	11.9 ±2.0	9.6 ±1.6 *	0.02

PP = Peak Power; MP = Mean Power; FI = Fatigue Index. The asterisks indicate the statistical significance vs Placebo: P < 0.05 (*); P < 0.01 (**); P < 0.001 (***).

Table 4*. Continuous Vertical Jump Test (CVJT): Performance Outcomes.*

Timepoint	Parameter	Placebo (n=8)	Clonapure (n=8)	P value
T0	PP (W/kg)	18.7 ±1.1	19.2 ±1.5	0.46
T1	PP (W/kg)	20.2 ±1.2	20.2 ±1.4	0.94
T2	PP (W/kg)	18.9 ±0.9	20.9 ±1.1 **	0.0014
T0	MP (W/kg)	17.8 ±1.6	17.5 ±0.6	0.63
T1	MP (W/kg)	17.2 ±1.0	18.3 ±1.3	0.08
T2	MP (W/kg)	17.8 ±1.2	19.5 ±1.4 *	0.02
T0	FI (%)	11.0 ±1.1	10.3 ±0.8	0.17
T1	FI (%)	10.6 ±1.1	9.6 ±0.8	0.056
T2	FI (%)	10.9 ±2.1	8.0 ±0.8 **	0.003

PP = Peak Power; MP = Mean Power; FI = Fatigue Index. The asterisks indicate the statistical significance vs Placebo: P < 0.05 (*); P < 0.01 (**); P < 0.001 (***).

Table 5*. Vertical Jump Performance Quality Indicators.*

Timepoint	Parameter	Placebo (n=8)	Clonapure (n=8)	P value
T0	NVJ15sec	9.2 ±0.6	9.5 ±0.5	0.29
T1	NVJ15sec	9.2 ±0.6	9.7 ±0.7	0.15
T2	NVJ15sec	9.3 ±0.5	9.8 ±0.7	0.12
T0	NVJ60sec	35.9 ±1.9	38.2 ±1.5 *	0.018
T1	NVJ60sec	34.3 ±1.8	39.6 ±1.6 ***	< 0.001
T2	NVJ60sec	35.4 ±1.7	39.8 ±1.3 ***	< 0.001
T0	VJ15sec (cm)	28.1 ±2.6	30.3 ±2.3	0.09
T1	VJ15sec (cm)	28.2 ±1.2	30.6 ±1.8 **	0.007
T2	VJ15sec (cm)	29.2 ±1.3	31.6 ±1.7 **	0.006
T0	VJ60sec (cm)	24.8 ±1.6	26.5 ±2.7	0.15
T1	VJ60sec (cm)	25.1 ±1.0	28.3 ±2.4 **	0.003
T2	VJ60sec (cm)	26.3 ±1.3	28.9 ±2.2 *	0.012

NVJ15sec = Number of vertical jumps in the first 15 seconds; NVJ60sec = Total number of vertical jumps performed in 60 seconds; VJ15sec = Average jump height during the first 15 seconds; VJ60sec = Average jump height over 60 seconds. The asterisks indicate the statistical significance vs Placebo: P < 0,05 (*); P < 0,01 (**); P < 0,001 (***).

4. Discussion

The present randomized, double-blind, placebo-controlled study provides novel evidence on the efficacy of Clonapure® in enhancing intermittent aerobic capacity and neuromuscular performance in elite female volleyball players over a 28-day intervention period. Our findings are consistent with prior work demonstrating that creatine supplementation improves repeated high-intensity performance and fatigue resistance in team sports [10, 11]. Specifically, the observed increases in peak and mean power output as well as reductions in fatigue index in both IVJT and CVJT tests mirror results reported by Hespanhol et al., where creatine users showed significantly better jump height maintenance across intermittent bouts [12].

One of the most relevant aspects of this study is the improvement in volleyball-specific endurance, as evidenced by the significant enhancement in VIET distance at T2. Previous investigations have demonstrated strong correlations between this test and VO2max, as well as competitive performance in volleyball [13]. Some other studies discussed whether supplementation with creatine is really able to improve the results of professional volleyball players in a short time, because the volleyball game is intermittent. There are active and passive phases. Time of active phases is on average 9-10 s, intervals between actions usually last 7-10 s. Sieroń et al. suggested that creatine supplementation should be limited only to individuals who strictly require it in the training process, for example having a deficiency in power or body weight [14]. Such supplementation should not be applied to the whole team without any exceptions.

Chigachiaraguti et al. in a double-blind, randomized, placebo-controlled study on semiprofessional Brazil volleyball players revealed that creatine monohydrate supplementation, despite the increased availability of plasma creatine did not promote better performance in the jumping test. No significant differences were observed in the variables related to jump height and relative jumping power between creatine group and Placebo group [15]. Because of the potential gain of weight of the players and the lack of robust evidence of the creatine supplementation on volleyball players, some US universities based do not recommend the intake of creatine supplements on women volleyball players [16].

However, this study on elite women volleyball players reveals that Clonapure® supplementation an ingredient based on creatine phosphate and creatine monohydrate reveled significant benefits and lack of side effects. Furthermore, all and any elite player participant in the study has a significant impact on VJ60sec, NVJ60sec and fatigue index without restriction. The superior output and the larger availability of the creatine phosphate system seems responsible for the benefits of Clonapure® vs creatine monohydrate. This likely reflects the superior recovery dynamics permitted by short rest intervals, allowing partial resynthesis of phosphocreatine (PCr), as suggested by Bogdanis et al. [17], who reported strong correlations between PCr recovery and power output in intermittent tasks.

In terms of methodology, the use of validated vertical jump tests under real training conditions enhances ecological validity. Our values for MP (up to 20.1 W/kg) and VJ height (29-30 cm) are in line with previous data in elite female volleyball athletes [18]. The improvements observed in VJ60sec, NVJ60sec and fatigue index further confirm that Clonapure® enhances resistance to neuromuscular fatigue during prolonged high-intensity tasks.

A critical advantage of the present work is the focus on elite female athletes, an understudied cohort in creatine literature [19]. Our results support findings from Tarnopolsky et al. and Smith-Ryan et al., who demonstrated that women respond positively to creatine despite hormonal fluctuations or lower baseline muscle creatine stores [20].

Interestingly, the comparison between intermittent and continuous vertical jumping tests in this study reflects physiological trends previously described in the literature. Despite both protocols inducing muscular fatigue, the intermittent test (IVJT) consistently produced higher mean power outputs and preserved jump height relative to the continuous test (CVJT), particularly at early time points. This likely reflects the superior recovery dynamics permitted by short rest intervals, allowing partial resynthesis of phosphocreatine (PCr), as suggested by Bogdanis et al. [21], who reported strong correlations between PCr recovery and power output in intermittent tasks. Moreover, neuromuscular fatigue in the CVJT may lead to altered jump coordination and mechanical compensation, especially near exhaustion, which can obscure the true capacity of the muscle-tendon complex. These findings are consistent with EMG-based studies in rugby and volleyball players, where prolonged continuous jumps resulted in increased activation of lower limb musculature and altered movement patterns [22]. By contrast, the IVJT may better preserve the elastic and reflex components of the stretch-shortening cycle (SSC), resulting in more stable outputs and less compensatory adjustments [23-25]. Thus, while both protocols are valid and informative, the IVJT may offer a more sensitive and reproducible assessment of neuromuscular endurance, particularly under conditions where fatigue-related mechanical alterations could bias performance outcomes in CVJT.

Despite its strengths, the study is limited by its small sample size (n=16) and lack of biochemical endpoints. These aspects could be addressed in future research, ideally with larger multiteam trials and mechanistic assays (e.g., muscle biopsies or phosphocreatine quantification).

This trial supports Clonapure® as a highly effective ergogenic aid in elite volleyball. The specific formulation and rapid onset of action compared to conventional creatine products may have meaningful applications in professional sports, particularly those characterized by high-intensity intermittent exertion [11, 12].

5. Conclusions

Clonapure® supplementation over 28 days significantly enhanced intermittent endurance and neuromuscular performance in elite female volleyball players. Its multi-component formulation demonstrated early-onset and sustained benefits. These findings support Clonapure® as a valuable ergogenic strategy in high-performance, intermittent team sports.

Abbreviations

VIET	Volleyball Intermittent Endurance Test
IVJT	Intermittent Vertical Jump Test
CVJT	Continuous Vertical Jump Test
PP	Peak Power
MP	Mean Power
FI	Fatigue Index
PCr	Phosphocreatine
ISSN	International Society of Sports Nutrition
CMJ	Countermovement Jumps
ICCs	Intraclass Correlation Coefficients
SD	Standard Deviation
NVJ15sec	Number Of Vertical Jumps During 15 Seconds
NVJ60sec	Total Jumps During The 60-Second Test
VJ15sec	Average Jump Height During The First 15 Seconds
VJ60sec	Average Jump Height Across 60 Seconds

Author Contributions

Alessandro Colletti: Conceptualization, Resources, Formal analysis, Investigation, Writing - original draft

Marzia Pellizzato: Data curation, Methodology, Investigation

Alejandra Hernández-Bueno: Data curation, Validation, Writing - review & editing, Visualization

Atanasio De Meo: Data curation, Conceptualization, Software

Alma Martelli: Resources, Project administration

Valentina Citi: Investigation

Giancarlo Cravotto: Conceptualization, Resources, Formal analysis, Investigation, Data curation

Data Availability Statement

The data is available from the corresponding author upon reasonable request.

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Conflicts of Interest

The authors declare no conflicts of interest.

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