

Effectiveness of Mineralizing Water in Skin Barrier Recovery after Skin Irritation

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Disclosure of Conflicts of Interest

- Support for these studies was provided by Laboratoires Vichy.
- Delphine Kerob and Marion Nielsen are full-time employees of Laboratoires Vichy.
- Enzo Berardesca and Adriana Bonfigli have no relationships to disclose.

Rationale and Objectives

- Vichy mineralizing water, which originates in the Auvergne region in France, is recognized to be a volcanic water highly enriched in minerals that strengthen the skin's natural defences.
- It has been renowned since the 18th century for its soothing dermatological properties and has been used as a cosmetic ingredient since 1931.
- In order to investigate skin barrier recovery, sodium lauryl sulfate (SLS) can be used to chemically induce skin barrier disruption [1].

The objective of this study was to evaluate the effect of Vichy volcanic mineralizing water (VVMW [Vichy]) compared to thermal water from another region (ATW [Avène]) on restoring an altered skin barrier.

Methods

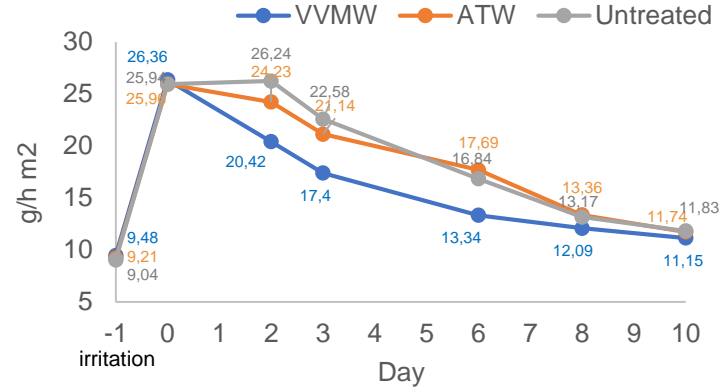
Study	Open study to evaluate the efficacy of the Vichy volcanic mineralizing water (VVMW) in restoring irritated skin
Subjects	20 men or women aged 20-60 years old No moisturizing products allowed on forearms for previous 10 days
Chemically-induced skin barrier disruption	Three 3x3cm areas were delineated on the forearms of each subject 3% SLS patches were applied for 16 hours to induce chemical irritation
Test products	The 3 chemically-irritated sites were randomly assigned to <ul style="list-style-type: none">• VVMW, 10 days twice daily application• Avene thermal water (ATW), 10 days twice-daily application• No treatment
Assessments	Transepidermal water loss (TEWL) by tewameter Redness by chromameter Erythema by clinical assessment (on a 4-point scale from absent to severe)

Results of Instrumental Evaluations

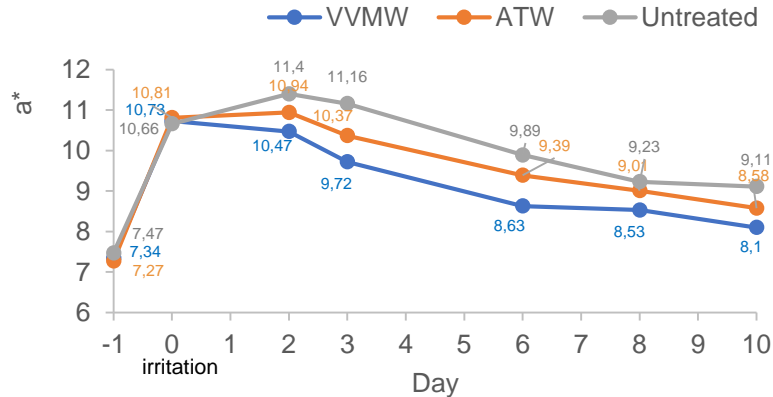
Transepidermal Water Loss

An accelerated statistically significant decrease in TEWL with VVMW as soon as D2 with a 22% decrease compared to D0 ($p < 0.05$).

TEWL decrease was not significant compared to baseline for ATW and untreated skin until D6.



Redness



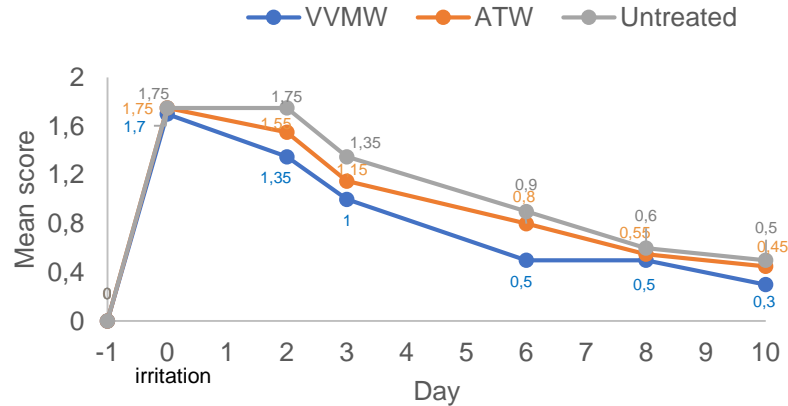
Redness decreased 20% with VVMW by D6 after irritation compared to D0 ($p < 0.05$).

Redness was improved by D6 with ATW.

There was no statistically significant improvement in redness for the untreated skin until D8.

Results of Clinical Evaluation

Erythema



Accelerated recovery of erythema at D2 (-20% vs. D0) for VVMW.

Decrease in erythema score was not statistically significant compared to baseline for ATW and untreated skin until D3 and D6, respectively.

Conclusions

Vichy volcanic mineralizing water leads to faster recovery of TEWL and erythema following chemically-induced skin barrier disruption than thermal water from Avène or untreated skin.