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### Search details

Light therapy or phototherapy for dermographism and urticaria

### Resources searched

NICE Evidence; TRIP Database; Cochrane Library; CINAHL; EMBASE; MEDLINE; Google Scholar

### Database search terms:

("light therapy" OR "phototherapy"), ("UVB therapy" OR "UVB treatment" OR "UVB light therapy" OR "UVB light treatment" OR "ultraviolet therapy" OR "ultraviolet treatment" OR "ultraviolet light therapy" OR "ultraviolet light treatment"), (dermatograph* OR dermograph* OR "skin writing"), (urticaria OR hives OR welt* OR "nettle rash"")

### Evidence / Google Scholar search string(s):

("light therapy" OR phototherapy OR UVB) (dermatographism OR dermographism OR dermatographia OR dermatographia OR "skin writing" OR urticaria)

### Guidelines and Policy

**British Association of Dermatologists**

Guidelines for evaluation and management of urticaria in adults and children, 2007
Narrowband ultraviolet B phototherapy is a suitable treatment option for solar urticaria

**Author(s)** Calzavara-Pinton P., Zane C., Rossi M., Sala R., Venturini M.

**Citation:** Journal of the American Academy of Dermatology, July 2012, vol./is. 67/1(e5-e9), 0190-9622;1097-6787 (July 2012)

**Publication Date:** July 2012

**Abstract:** Background: Narrowband (NB) ultraviolet (UV) B lamps are widely used for treatment and prophylaxis of several skin diseases. Objective: We sought to assess the efficacy of two protocols of NB-UVB therapy for the prophylaxis of UVB-sensitive and UVB-insensitive solar urticaria (SU). Methods: Subjects affected by SU underwent phototesting for assessment of the minimal erythemal dose and minimal urticarial dose. Patients without urticarial response to UVB underwent a single daily exposure every other day for 4 weeks (group A). Patients with a urticarial test response to broadband UVB or NB-UVB (group B) received 3 daily exposures (on working days) for the first week. Afterward, they were treated as the patients of group A for 3 weeks. Follow-up visits took place after 1 and 3 months. Results: A total of 39 patients completed the study. In groups A (29 patients) and B (10 patients), the median total number of exposures was 12 (interquartile range [IQR]: 12; 15) and 25.5 (IQR 24; 27), respectively. The median total NB-UVB dose was 10.3 J/cm<sup>2</sup> (IQR 9.9; 11) for group A and 9.1 J/cm<sup>2</sup> (IQR 8.5; 10.6) for group B. At follow-up visits, patients reported good tolerance to the sun. Limitations: A direct comparison of NB-UVB with UVA or psoralen plus UVA for the photoprophylaxis of SU is still lacking. Conclusion: NB-UVB phototherapy was well-tolerated and effectively prevented SU relapses.

**Source:** EMBASE

Narrowband ultraviolet B (311 nm, TL01) phototherapy in chronic ordinary urticaria.

**Author(s)** Aydogan, Kenan, Karadogan, Serap Koran, Tunali, Sukran, Saricaoglu, Hayriye

**Citation:** International journal of dermatology, Jan 2012, vol. 51, no. 1, p. 98-103 (January 2012)

**Publication Date:** January 2012

**Abstract:** Chronic ordinary urticaria (COU) can severely reduce quality of life and be difficult to control. Ultraviolet (UV) A and UVB phototherapy has been reported to decrease the release of histamine from either mast cells and/or basophils. Previous small studies have suggested that UVB phototherapy is a good alternative treatment for COU. The purpose of this study was to assess the efficacy of narrow-band UVB (NB-UVB) phototherapy for COU. Twenty-two patients (three male, 19 female) received NB-UVB phototherapy. These patients had not responded to at least two H1 antihistamines, and most had been treated with a variety of antihistamine combinations. Clinical responses were assessed according to an outcome scoring scale. During both visits, patients were administered the following: the visual analogue scale (VAS) on present pruritus and/or whealing; chronic urticaria impact on patients’ quality of life according to the interference with daily activities, quality of sleep, and flare-up rates. The median number of treatments was 31.4 (9-44), and the mean top dose was 9.46 J/cm<sup>2</sup> (1.1-16.4 J/cm<sup>2</sup>). NB-UVB treatment led to clearance in 10 patients (45%), marked improvement in five (22%), and moderate improvement in seven (31%) patients according to an outcome scoring scale. Mild side effects were observed in two
patients. Six patients who cleared or observed marked improvement remained clear at follow-up for a period of six months to one year, and other patients had a few recurrent lesions that did not need retreatment. For VAS scores and total chronic urticaria impact on patients’ quality of life scores, the differences between baseline and after treatment scores were significantly lower (P < 0.001, P < 0.001, respectively). Narrow-band UVB (NB-UVB) therapy is an effective, well-tolerated treatment option in second-line therapy for COU. This therapy can lead to subjective relief of pruritus and whealing and objective reduction of whealing. Further larger studies with longer follow-up periods are necessary to determine the proper clinical response and long-term complications of this therapy in COU. © 2012 The International Society of Dermatology.

Source: Medline
Available in fulltext from International Journal of Dermatology at EBSCOhost

Narrow-band UVB combined with Mizolastine in the treatment of chronic idiopathic urticaria
Author(s) Zuo F.-G., Shen F., Fan Q., He Y.-N.
Citation: Journal of Clinical Dermatology, August 2011, vol./is. 40/8(504-506), 1000-4963 (05 Aug 2011)
Publication Date: August 2011
Abstract: Objective: To observe the effect of narrow-band UVB in combination with Mizolastine in the treatment of chronic idiopathic urticaria. Methods: Eighty-one patients with chronic idiopathic urticaria were randomly assigned into 2 groups: Forty-two patients in combination-therapy group received narrow-band UVB phototherapy 3 times a week for 24 exposures and oral Mizolastine 10 mg daily. Thirty-nine patients in the control group received oral Mizolastine only. The symptoms and signs of the patients in the two groups were assessed before the treatment, at the week 4 and week 8 during the treatment and 8 weeks after treatment. Results: The symptomatic scores of urticaria in the two groups were significantly lowered (P < 0.01), especially in the combination treatment group (P < 0.01). At the end of 8-week follow-up, a further decrease of the scores was seen in the combination therapy group, with a response rate of 88.1%, whereas in the control group 30.8%. Conclusion: Narrow-band UVB may be an effective and safe complementary treatment for the patients with chronic idiopathic urticaria.
Source: EMBASE

Symptomatic dermatographism: current concepts in clinical practice with an emphasis on the pediatric population.
Author(s) Mecoli, Christopher A, Morgan, Aaron Joseph, Schwartz, Robert A
Citation: Cutis, May 2011, vol. 87, no. 5, p. 221-225, 0011-4162 (May 2011)
Publication Date: May 2011
Abstract: Symptomatic dermatographism reflects an exaggerated cutaneous response to the physical stimulus of pressure. Some consider it a common type of childhood physical urticaria. Its etiology can vary widely from drug reactions and infectious agents to systemic diseases and genetic inheritance. The mechanism is thought to be related to histamine degranulation due to a mechano-immunologic trigger, leading to the common symptoms of pruritus and burning in areas exposed to increased pressure, such as tight clothing, belts, and waistbands. The diagnosis is typically made with a blunt object such as a tongue blade or unopened ball-point pen pressed along the back and/or forearm, which elicits urtication. The mainstay of treatment is H1- and H2-receptor antagonists but also can include immunosuppressive agents, steroids, and phototherapy for refractory or severe cases.
Source: Medline

Narrowband UVB phototherapy in children: A New Zealand experience
Author(s) Tan E., Lim D., Rademaker M.
Abstract: Background: Phototherapy is effective for many dermatoses in adults, but there is a paucity of data for its use in children. Objectives: To review the efficacy and tolerability of narrowband UVB phototherapy in children at a tertiary centre in New Zealand, and determine if there were any factors that differentiated responders from non-responders. Methods: A prospective analysis of children (<16 years old) who had undergone phototherapy over a 15-year period. Results: 116 children received phototherapy with a total of 144 courses. Mean age was 11.0 years with the majority being European and having skin phototype II. Atopic dermatitis was the most common indication for treatment followed by psoriasis, pityriasis lichenoides, nodular prurigo, morphea, vitiligo, urticaria pigmentosa and erythropoietic porphyria. Treatment was effective in the majority of children (72%). Most received only one course. For responders, the mean number of treatments was 32.4. The mean dose per treatment to achieve clearance was 886 mJ/cm² and the mean maximum treatment dose per treatment was 1328 mJ/cm². All children tolerated treatment well with 36% developing brief, minimally symptomatic, erythema. Only two children experienced exacerbations of their underlying dermatoses. Conclusions: This study shows that phototherapy is an effective and well-tolerated treatment modality in children.

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Narrowband ultraviolet B phototherapy is beneficial in antihistamine-resistant symptomatic dermographism: a pilot study.

Author(s) Borzova, Elena, Rutherford, Anne, Konstantinou, George N, Leslie, Kieron S, Grattan, Clive E H

Citation: Journal of the American Academy of Dermatology, Nov 2008, vol. 59, no. 5, p. 752-757 (November 2008)

Abstract: Symptomatic dermographism is the most common type of physical urticaria. It can be severe and poorly controlled with H1 antihistamines in some patients. Photochemotherapy (psoralen plus ultraviolet [UV] A) may help the itch of dermographism but the effect of narrowband (NB) UVB therapy has not been previously studied. We sought to examine the clinical efficacy of NB UVB therapy for itch and whealing in symptomatic dermographism and to assess the duration of the effect during 3 months of follow-up. Eight patients (6 female) were enrolled into an open uncontrolled prospective study. Intensity of itching and whealing was assessed with visual analog scales and the whealing response was evaluated by testing with a dermographometer at pressures of 20, 36, and 60 g/mm² on the upper aspect of the back. NB UVB phototherapy was given for 6 weeks 3 times weekly starting at 50% of minimal erythema dose with 20% to 0% increments as tolerated. Fexofenadine (180 mg/d) was taken during the run-in period and subsequently throughout the study and follow-up as required. Patients were followed for 3 months with regular assessments every 6 weeks after completion of phototherapy. All patients showed an improvement in itching at the end of NB UVB treatment (mean [SD] reduction 52.3% [31.6%]). Subjective assessment of whealing revealed a significant improvement in all but two patients (mean [SD] reduction 71% [54%]). There was a small and statistically significant improvement in cumulative dermographometer-induced wheal widths at the end of phototherapy (P = .038). A time trend for the relapse of symptoms within 12 and 18 weeks after completing phototherapy was significant for both visual analog scale scores but not for dermographometer-induced whealing. The apparent rarity of antihistamine-resistant symptomatic dermographism limited the study to a small number of participants. The severity of the condition did not permit a controlled and blinded
study design. NB UVB phototherapy is an effective second-line treatment for patients with severe symptomatic dermographism responding poorly to fexofenadine. This therapy can lead to subjective relief of pruritus and whealing and objective reduction of whealing. NB UVB phototherapy may restore symptom control with antihistamines in some patients.

**Source:** Medline

Treatment of chronic urticaria with narrowband ultraviolet B phototherapy: a randomized controlled trial.

**Author(s)** Engin, Burhan, Özdemir, Mustafa, Balevi, Ali, Mevlitoglu, Inci

**Citation:** Acta dermato-venereologica, Jan 2008, vol. 88, no. 3, p. 247-251, 0001-5555 (2008)

**Publication Date:** January 2008

**Abstract:** Data regarding narrowband ultraviolet B (NB-UVB) phototherapy in patients with chronic urticaria is limited. The aim of this open, controlled study was to determine whether NB-UVB is effective in treating urticaria in combination with antihistamine. A total of 81 patients with chronic urticaria were recruited, 48 of whom were randomized into the NB-UVB plus antihistamine group. The control group (n = 33) received only antihistamine. Patients were assessed using the urticaria activity score and a visual analogue score (VAS). The 2 groups were evaluated at the same time-points: at treatment sessions 10 and 20 and at follow-up 3 months post-treatment. The reduction in urticaria activity score and VAS was statistically significant (p < 0.05 for both groups). When comparing the groups, the mean urticaria activity score was significantly lower in the NB-UVB group at session 10 (22.6 vs. 27.3) and session 20 (17.4 vs. 20.7). Statistically significant differences were also noted in VAS between the 2 groups (p < 0.01) at 3 months post-treatment. We conclude that NB-UVB may be an effective complementary treatment for patients with chronic urticaria.

**Source:** Medline

Available in fulltext from Acta Dermato-Venereologica at EBSCOhost

Narrowband UVB phototherapy in skin conditions beyond psoriasis

**Author(s)** Gambichler T., Breuckmann F., Boms S., Altmeyer P., Kreuter A.

**Citation:** Journal of the American Academy of Dermatology, April 2005, vol./iss. 52/4(660-670), 0190-9622 (April 2005)

**Publication Date:** April 2005

**Abstract:** Background: Narrowband (NB) UVB phototherapy has been proven to be clearly more effective than broadband UVB and safer and/or more practicable than psoralen-UVA in the management of psoriasis. However, the role of NB UVB seems to be less clear in the management of skin conditions beyond psoriasis. Objectives: We sought to give an update on clinical experiences in NB UVB of nonpsoriatic skin conditions, and to establish its current position within the spectrum of competing photo(chemo)therapeutic options. Methods: The computerized bibliographic database PubMed, without time limits, and other sources were screened for clinical trials on NB UVB. Included were research articles of randomized controlled trials, open prospective studies, and retrospective observations on NB UVB in skin disorders other than psoriasis. Results: A total of 28 articles met our eligibility criteria including 6 randomized controlled studies, 16 open prospective studies, and 6 retrospective observations. NB UVB is effective in patients with chronic atopic dermatitis (AD) (n = 719) and generalized vitiligo (n = 305) and appears to have some advantages over competing photo(chemo)therapeutic regimens. NB UVB also seems to be effective in patients with polymorphic light eruption (n = 25), early stages of cutaneous T-cell lymphoma (n = 108), chronic urticaria (n = 88), lichen planus (n = 15), pruritus associated with polycythemia vera (n = 10), seborrheic dermatitis (n = 18), actinic prurigo (n = 6), and acquired perforating dermatosis (n = 5). The quality of evidence determined for the aforementioned diagnoses ranged from high to moderate to very low.
Conclusions: The best currently available data on NB UVB in nonpsoriatic conditions exist for AD and generalized vitiligo. In view of its efficacy, benefit/risk profile, and costs, NB UVB may be considered the first-line photo(chemo)therapeutic option for moderately severe AD and widespread vitiligo. In the treatment of most other nonpsoriatic conditions, NB UVB appears to be effective, but current data allow no definitive conclusions as to whether NB UVB should be preferred to competing photo(chemo)therapeutic options such as UVA1 and psoralen-UVA regimens. Because NB UVB may have a wider indication spectrum, including AD, vitiligo, and early-stage T-cell lymphoma, and appears to be equally effective or even more effective than broadband UVB, a switch from broadband UVB to NB UVB seems to be justified. © 2005 by the American Academy of Dermatology, Inc.

Source: EMBASE

Narrow-band (TL-01) ultraviolet B phototherapy for chronic urticaria.
Author(s) Berroeta, L, Clark, C, Ibbotson, S H, Ferguson, J, Dawe, R S
Citation: Clinical and experimental dermatology, Jan 2004, vol. 29, no. 1, p. 97-98, 0307-6938 (January 2004)
Publication Date: January 2004
Source: Medline
Available in fulltext from Clinical & Experimental Dermatology at EBSCOhost

UVB treatment of factitious urticaria.
Author(s) Johnsson, M, Falk, E S, Volden, G
Citation: Photo-dermatology, Dec 1987, vol. 4, no. 6, p. 302-304, 0108-9684 (December 1987)
Publication Date: December 1987
Abstract: Forty-three patients with factitious urticaria were treated with sub-erythematous doses of UVB 5 times weekly for 2-3 weeks. After an average of 13 treatments, 25 were free from symptoms, 14 improved and 4 were unchanged. The dermographism test was negative or considerably reduced after treatment. Most of the patients had permanent effects from the treatment, but 13 relapsed. As the effect of other treatment modalities in this disorder is unsatisfactory, the encouraging results documented in this clinical trial suggest that UVB therapy should be considered for patients with factitious urticaria.
Source: Medline

UVB phototherapy and photochemotherapy (PUVA) in the treatment of polymorphic light eruption and solar urticaria.
Author(s) Addo, H A, Sharma, S C
Citation: The British journal of dermatology, Apr 1987, vol. 116, no. 4, p. 539-547, 0007-0963 (April 1987)
Publication Date: April 1987
Abstract: Forty subjects (36 with polymorphic light eruption and four with solar urticaria) were treated during the spring and early summer of the years 1982 to 1985 with either UVB phototherapy (a total of 54 treatment courses in subjects with polymorphic light eruption) or photochemotherapy (PUVA) (18 treatment courses in polymorphic light eruption and eight in solar urticaria patients). Both forms of prophylactic therapy were found to be effective in 90% of those with polymorphic light eruption, and PUVA in all those with solar urticaria. The optimum duration of treatment was 5 weeks. Adverse reactions, although common, were usually slight and rarely required alteration of the treatment regimen.
Source: Medline
Available in fulltext from British Journal of Dermatology at EBSCOhost

UVB treatment of factitious urticaria
Author(s) Johnsson M., Falk E.S., Volden G.
Ultraviolet light therapy in chronic urticaria

Author(s): Hannuksela M., Kokkonen E.-L.

Citation: Acta Dermato-Venereologica, 1985, vol./is. 65/5(449-450), 0001-5555 (1985)
Publication Date: 1985

Abstract: Fifteen patients with chronic urticaria were treated with ultraviolet light B (UVB) for 1-3 months during the spring 1984 and a follow-up study was performed in November 1984-January 1985. Patients with cold urticaria, cholinergic urticaria and dermographism became clearly better or got rid of their symptoms more often than those with 'non-specific' chronic urticaria. The good results achieved during the phototherapy held during the summer but in the autumn urticaria became worse in one third of the cases. The results suggests that UV-therapy might be worth trying in many patients with chronic urticaria.

Source: EMBASE
Available in fulltext from Acta Dermato-Venereologica at Free Access Content

Phototherapy of urticaria pigmentosa: Clinical response and changes of cutaneous reactivity, histamine and chemotactic leukotrienes

Author(s): Czarnetzki B.M., Rosenbach T., Kolde G., Frosch P.J.

Citation: Archives of Dermatological Research, 1985, vol./is. 277/2(105-113), 0340-3696 (1985)
Publication Date: 1985

Abstract: Ten patients with moderate to very severe urticaria pigmentosa were studied for the therapeutic effect of photochemotherapy (PUVA; six adults) and selective ultraviolet phototherapy (SUP; four adolescents). Despite a high mean PUVA dosage (138.6 +/- 63.4 J/cm<sup>2</sup>), only two patients had a very good response, while three had a good response and one had a fair response. On the reduction of the frequency of treatments, the symptoms gradually recurred, and several months after the discontinuation of therapy, the clinical status had reached the level prior to PUVA. The results with SUP were even less encouraging. A number of biophysical and biochemical parameters of the skin were studied in five patients before PUVA treatment, immediately after several months of PUVA treatment and again 5 months after the discontinuation of PUVA treatment. Weal and erythema reactions to intracutaneous skin tests remained unchanged after PUVA, while wealing with topically applied dimethylsulfoxide (DMSO) decreased. Transepidermal water loss was markedly reduced over DMSO weals. Histamine levels, which were elevated in lesional but not in normal skin, dropped with PUVA treatment, but after the discontinuation of treatment, they increased again in the lesions. On reverse-phase high-performance liquid chromatography, two main chemotactic factors, leukotriene B<sub>4</sub> and 5-HETE, were identified in lesional skin. Chemotactic activity was elevated in both lesional and uninvolved patient skin, reached normal levels at both sites after PUVA and maintained these low levels for several months after the discontinuation of treatment. Our data suggest that PUVA has reversible anti-inflammatory effects on human skin, because it increases epidermal-barrier function and decreases the synthesis of mediators of inflammation. These observations show the transitory therapeutic benefit of PUVA in patients with urticaria pigmentosa.

Source: EMBASE

Ultraviolet light therapy in chronic urticaria.

Author(s): Hannuksela, M, Kokkonen, E L

Citation: Acta Dermato-Venereologica, Jan 1985, vol. 65, no. 5, p. 449-450, 0001-5555 (1985)
Publication Date: January 1985
Abstract: Fifteen patients with chronic urticaria were treated with ultraviolet light B (UVB) for 1-3 months during the spring 1984 and a follow-up study was performed in November 1984-January 1985. Patients with cold urticaria, cholinergic urticaria and dermographism became clearly better or got rid of their symptoms more often than those with "non-specific" chronic urticaria. The good results achieved during the phototherapy held during the summer but in the autumn urticaria became worse in one third of the cases. The result suggests that UV-therapy might be worth trying in many patients with chronic urticaria.
Source: Medline
Available in fulltext from Acta Dermato-Venereologica at Free Access Content

Home phototherapy of solar urticaria: a case report.
Author(s) Diffey, B L, Farr, P M, Ive, F A
Citation: Photo-dermatology, Jun 1984, vol. 1, no. 3, p. 145-146, 0108-9684 (June 1984)
Publication Date: June 1984
Source: Medline

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