

# An Open Trial of Auricular Acupuncture for the Treatment of Repetitive Self-Injury in Depressed Adolescents

M.K. Nixon, M.D.

Mental Health Patient Service Unit  
Children's Hospital of Eastern Ontario

M. Cheng, M.D.

Clinical Fellow  
Sick Children's Hospital, Toronto, Ontario

P. Cloutier, M.A.

Mental Health Patient Service Unit  
Children's Hospital of Eastern Ontario

Correspondence should be addressed to. Dr. Mary Kay Nixon, Mental Health PSU, Children's Hospital of Eastern Ontario, 401 Smyth Rd., Ottawa, ON, K1H 8L1. E-mail: nixon@cheo.on.ca

## ABSTRACT:

Repetitive self-injurious behavior (SIB) is frequently seen in depressed adolescents. In addition to it providing relief for dysphoric symptoms there is evidence of an addictive component to this behaviour. Because auricular acupuncture (AA) has been shown to be effective as an adjunct treatment to cocaine dependence, we wished to test the feasibility and potential efficacy of this treatment in depressed adolescents with repetitive SIB. Our pilot results suggest that AA is an acceptable treatment in this group and that it may be an effective adjunct treatment for repetitive SIB. Moreover, decreases in SIB were evident while depressive symptoms remained unchanged.

## INTRODUCTION:

SIB in the non developmentally delayed population often develops during adolescence, can be highly repetitive and comorbid with mood disorders and is frequently difficult to treat. The act of self-injury is often preceded by intense feelings of dysphoria mixed with anxiety and/or anger (Favazza & Rosenthal; 1993). Upon cutting, hospitalized adolescents frequently report a release of tension and relief from negative affective states, reinforcing the behaviour. Addictive features, such as increasing the frequency and/or severity of SIB to achieve the same effect since starting have been noted in this behavior, with 97.6% of a hospitalized adolescent sample meeting adapted DSM IV criteria for dependence on SIB. The recognition of addictive features and the potential role of endogenous opiates in SIB's relieving and reinforcing aspects has led to the study of naltrexone in single case and open label studies of adults with mixed results (Godart et al, 2000; Sonne et al, 1996). Results of controlled studies in the developmentally delayed population have also been mixed with the suggestion that certain subtypes, (e.g., those with elevated  $\beta$ -endorphin post injury) may be more responsive to this treatment (Chabane et al, 2000; Sandman et al, 2000). A recent controlled study (Avants et al, 2000) has shown that AA may be a useful adjunct to the treatment of cocaine dependence, an addiction whose response has been less than favorable to traditional treatment approaches. Recognizing that alternatives to traditional treatments deserve further investigation, our group wished to assess the feasibility and potential efficacy of AA in depressed adolescents with repetitive SIB, in light of its addictive features.

## METHOD:

Nine adolescents from our inpatient and partial hospitalization programs meeting DSM-IV criteria for a major depressive episode and/or dysthymia and a Beck Depression Inventory (BDI) score of greater than 16 who admitted to repetitive SIB and/or repetitive urges to self-injure (at least 1/week in the past 6 months) participated in the pilot study. The mean age at screening was  $15.7 \pm 1.5$  (8 females and 1 male). Exclusion criteria included any developmental delay, psychosis, active suicidal ideation, substance dependence, acute medical illness, pregnancy, treatment with an opioid antagonist, and allergy to metal or needle phobia.

Acupuncture treatment consisted of 3 treatments, once a week over 3 weeks. Patients would sit together and were instructed to relax while receiving bilateral AA at 5 points (Sympathetic, Shen Men, Kidney, Liver, Lung) as per the original Lincoln protocol (Smith, 1979). The acupuncturist was instructed to have minimal interaction during treatment but the adolescents were permitted to talk. The disposable needles remained in place for 50 minutes and when removed were replaced with adhesive metallic press balls at the same 5 ear sites. Patients were instructed to press on one or several of these balls between acupuncture sessions to see if this may assist in diminishing the urge to self-injure. The addition of press balls and reduction from 5 days a week to once a week needle treatments were modifications made to the Lincoln protocol due to concerns that adolescents would not be compliant with the original 5 day/week, three-week treatment protocol. At the end of each treatment week the ear auricles were examined for any loss of adhesive press balls or possible skin erosion or infection prior to re-insertion of the needles. Participants continued their other treatments including medication and therapy "as usual" throughout the study period.

Treatment outcome was based on comparing baseline measures of frequency of SIB and urges to self-injure obtained from a self report measure with a frequency count obtained through a clinical interview at 1 week and 4 weeks post treatment. Secondary measures included the BDI, the Hamilton Depression Rating scale (HDRS) and a measure of anger expression (State Trait Anger Expression Inventory; STAXI). Participants were asked to complete a brief questionnaire and clinical interview regarding their impressions of AA at the 4-week post treatment follow-up.

## RESULTS:

Eight participants completed the treatment, one was withdrawn due to hospitalization for a suicide attempt and one participant did not complete the 4-week post treatment follow-up.

Prior to treatment, almost daily urges to self-injure were reported in 67% (6/9) of the sample while 56% (5/9) self-injured at least once a week but less than daily. Mean BDI and HDRS scores at baseline were in the severely depressed range, while 80% of STAXI anger in and 60% anger out scores were clinically elevated (i.e., over the 75th percentile). 100% of the sample met criteria for “dependence” on SIB using modified substance dependence DSM-IV criteria (see table 1). Two separate repeated measures ANOVAs were analyzed for the urges and acts of self-injury respectively. Means and standard deviations of urges and acts can be found in table 2. There was no statistically significant difference in urges to self-injure over time, however, the mean number of urges decreased from screening to 1 week post-treatment and remained lowered at 4 weeks post-treatment. There was a significant main effect of time for acts of self-injury ( $F(2,5) = 8.82, p=.023$ ). A priori simple contrasts revealed that acts of self-injury decreased at 1 week post treatment from screening ( $F(1,6) = 20.25, p=.004$ ) and at 4-weeks post-treatment from screening ( $F(1,6) = 8.00, p=.030$ ).

While self-rated and clinical ratings of depression did not change significantly at 1 and 4 week post treatment follow-up, mean internalizing anger scores were significantly reduced at 4 weeks post treatment follow-up.

The adhesive metallic balls were not deemed to be a successful addition to the needle treatment as they frequently fell out due to poor adhesive. Feedback from participants indicated that 86% (6/7) would recommend AA to others with SIB. 71.4% (5/7) felt that the treatment was moderately to extremely effective. Comments at follow-up included: “I felt as if the stress was relieved”, “I was calmer and didn’t have any urges (to self injure)”, treatments “three times a week would be better”, as well as one person indicated that “it doesn’t help”. No major or minor adverse effects related to the acupuncture treatment were noted.

## DISCUSSION:

These pilot results suggest that AA was accepted and well tolerated in depressed adolescents with SIB. Where repetitive self-injury occurs with addictive features, AA may be a useful adjunct to standard treatments. The fact that SIB urges and/or acts were reduced despite any significant change in levels of depression suggests that any potential “active ingredient” in AA did not target depressive symptoms. The experience of internalized anger and its relationship to SIB and AA merits further exploration. Auricular acupuncture with its relatively low cost, tolerability, ease of administration, and favorable side effect profile deserves further investigation as a potential adjunct treatment for repetitive self-injury in depressed adolescents. While AA mechanism(s) of action have yet to be clearly elucidated, any potential efficacy in the treatment of SIB should be explored. Pursuing this could lead to better understanding the effects of AA as well as any underlying biological aspects related to the development and maintenance of repetitive SIB.

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Table 1  
**Addictive features**

Since you started to self-injure...	Percentage (n)
1. Your self-injury has increased in frequency	100.0 (9)
2. Your tension level increases without self-injury	100.0 (9)
3. You continue the behaviour despite recognizing that it is harmful	100.0 (9)
4. The behaviour causes problems for you socially	89.0 (8)
5. The behaviour is time consuming	89.0 (8)
6. The frequency and/or intensity has increases in order to achieve the same effect	67.0 (6)
7. The severity of your injuries has increased	56.0 (5)

Table 2  
**Mean urges and acts of self-injury by phase of treatment**

	Screening	1-week Post-treatment	4-weeks Post-treatment	Significance
Urges	4.3 ± 0.9	2.6 ± 1.9	2.6 ± 1.5	ns
Acts	3.0 ± 1.0	0.4 ± 0.8	1.3 ± 1.3	p=.023

Note: higher scores indicate more frequent urges and acts of self-injury (0=none, 5=daily)