Alexithymia in male infertility

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The continuing confrontation with the thoughts and feelings surrounding an unfulfilled wish for a child makes coping very difficult. There is empirical evidence that, in medical illnesses associated with stress and loss of quality of life, patients react with alexithymia, which means a difficulty to communicate emotions. In this study we compared 84 infertile men with a group of 96 healthy men and 43 male psychosomatic outpatients concerning their ability to communicate feelings, measured by the Twenty-Item Toronto Alexithymia Scale and the amount of psychopathologically relevant symptoms, especially somatization, measured by the Symptom Checklist 90-R and a List of Complaints (Beschwerden-Liste). The results showed a significantly higher alexithymia in infertile men compared with healthy men ($P < 0.05$), but a significantly lower alexithymia compared with psychosomatic outpatients ($P < 0.05$). Furthermore the study group showed significantly more somatic complaints in the List of Complaints compared with healthy men ($P < 0.05$). The importance of alexithymia in male infertility is discussed on the basis of empirical results that it might play a defensive role as far as depression is concerned but on the other hand increases the possibility of somatic complaints. The need for prospective studies in further research is emphasized.

Key words: alexithymia/coping/male infertility/personality/somatization

Introduction

The diagnosis of infertility causes a considerable amount of stress, which leads to a change in the self-image associated with lower self-esteem (Kedem et al., 1990; Nachtigall et al., 1992; Stauber, 1993).

As far as male infertility is concerned, different studies found a relationship between an unfulfilled wish for a child and an increase in couple conflicts, a greater sexual dissatisfaction and a lower frequency of sexual intercourse (Andrews et al., 1991; Müller et al., 1999). The affected men reacted with anxiety and an increase in somatic complaints (Berger, 1980; Kedem et al., 1990; Dunkel-Schetter and Lobel, 1991).

With respect to the male reaction to the diagnosis and treatment of male infertility, there are gender-specific differences concerning social support after the diagnosis of sterility (Kirschbaum et al., 1995). Due to a pervasive belief in a link between infertility and impotence in the general population, the diagnosis of male infertility is very stigmatizing. Men therefore get less social support than women, which can be seen by the fact that women often assume the role of the infertile partner in public (Snowden et al., 1983; Bernt et al., 1992). Secrecy surrounding male infertility secret may lead to an even greater amount of stress. From our clinical and empirical experiences with male infertile patients, we developed the hypothesis that as a reaction to the stigmatizing diagnosis of infertility the patients tend to suppress their emotions and appear to have a higher degree of alexithymia.

Alexithymia (a Greek word, meaning ‘no words for emotions’) is a psychological concept, which refers to the difficulty of identifying and communicating feelings. Former investigations (Freyberger, 1977; Wise et al., 1990) have distinguished between alexithymia as a personality trait and a reactive alexithymia, also called ‘secondary alexithymia’. Alexithymia as a personality trait can be understood as a deficit in affect regulation that has widely been discussed as a characteristic in psychosomatic outpatients (Taylor et al., 1993). The secondary alexithymia was diagnosed as a state-dependent reaction in (medically) ill patients to mitigate painful affects and to defend against depression (Keltikangas-Järvinen, 1987; Havilander et al., 1988a,b; Wise et al., 1990; Fukunishi et al., 1992; Fukunishi et al., 1992). This alexithymic reaction can best be understood in the sense of a continuous suppression of (negative) emotions.

If, as we suppose, infertile men tend to suppress their emotions and show alexithymic characteristics, we would assume that this might have important clinical implications. There is growing evidence that there is a close link between the non-expression of emotion and a tendency to develop
somatic complaints (Bach et al., 1994; Wise and Mann, 1994; Bach and Bach, 1995; Wise et al., 1995).

How can this relationship be understood? A number of studies demonstrated that the failure to express negative emotions causes stress (Buck, 1992; Pennebaker and Traue, 1992), which can be seen in higher levels of electrodermal arousal in alexithymic individuals and slower recovery times in novelty situations (Rabavilas, 1987), relatively high levels of sympathetic nervous system responding (Martin and Pihl, 1986) and an influence on immune function (Kagan et al., 1988; Pennebaker et al., 1988a). The stress due to the consequent lack of authentic emotional communication with others and the bioregulation that such communication engenders can lead to somatic complaints and can be associated with an increased susceptibility to physical illness and an increased incidence of hospitalizations (Pennebaker et al., 1988; Pennebaker, 1989; Buck, 1992; Berry and Pennbaker, 1993; Jokamäa et al., 1996). Thus, the symptom of somatization in infertile men found in previous studies could be better understood as a consequence of the non-expression of emotions.

The main purpose of this study was to investigate the following hypotheses. (i) Infertile men have significantly higher scores in alexithymia compared with a group of healthy male volunteers. We wanted to investigate whether the study group differs significantly in alexithymia from a group of psychosomatic outpatients, a group known to have a very high prevalence of alexithymia. By comparing the group of infertile men with psychosomatic patients, a realistic assessment of the degree of alexithymia in the study group was intended. (ii) Infertile men show more somatic complaints than a group of healthy male volunteers, but apart from somatization they are mainly inconspicuous with respect to psychopathological symptoms.

Materials and methods

Sample

Psychological tests were distributed to 94 infertile men attending an Infertility Service after having given informed consent. A total of 84 men were finally enrolled in the study, because questionnaires were incomplete in 10 patients.

All men underwent an extensive interview, physical and laboratory examinations including ultrasonography. The results of spermograms and hormone analyses will be presented elsewhere. Forty-four patients (52.4%) had pathological spermograms and pathological organ findings (e.g. varicocele). Forty patients (47.6%) had pathological spermograms, but no pathological organ findings. In no case was sexual dysfunction diagnosed. The duration of the desire for a child ranged from half a year to 16 years (mean 3.8 years); the duration of treatment ranged from 1 month to 192 months (mean 22.6 months). Table I shows the sample characteristics, which were quite usual for a group of male infertile patients in an andrological clinic (Rowe et al., 2000). Two children (from two patients) resulted from previous relationships with respective men as supposed biological fathers (secondary infertility). In all cases the female partners were investigated by a gynaecologist prior to the study. The diagnosis of sterility could not be confirmed for any female partner.

A comparison group was sampled from originally 104 healthy male volunteers and from a group of 43 randomly chosen male psychosomatic outpatients. In the group of healthy male volunteers, eight men dropped out of the study because of incomplete questionnaires. In the group of male psychosomatic outpatients there were no drop-outs. All groups were comparable concerning age, educational level and socioeconomic status, which was statistically tested (F-test, χ²-test).

The sociodemographic characteristics of the three groups can be seen in Table II.

Materials

Alexithymia was measured dimensionally using the German version of the Twenty-Item Toronto Alexithymia Scale [TAS-20 (Bach et al., 1996)], which was originally developed by Bagby and colleagues (Bagby et al., 1994). The German version of the TAS-20 is a twenty-item self-report instrument that has been demonstrated to have sufficient internal consistency [Cronbach’s alpha in our study r = 0.72 (sum value alexithymia)], good reliability, as well as construct and criterion validity to measure alexithymic characteristics. The TAS-20 comprises the following subscales: F1 = difficulties in identifying feelings (e.g. ‘Often I do not know my feelings’; ‘When I lose my composure I often do not know whether I am sad, angry or anxious’); F2 = difficulties in describing feelings (e.g. ‘It is difficult for me to find words for my feelings’; ‘It is difficult for me to communicate my feelings even to close friends’); F3 = an externally oriented analytic mode of thinking (e.g. ‘I do not like to talk with others about their feelings, I prefer talking about their daily activities’). Furthermore the TAS-20 generates a sum value ‘alexithymia’.

To investigate the psychopathological symptoms of somatization we used the List of Complaints (Beschwerden-Liste; Zerssen, 1976). This inventory consists of 24 items, which ask for general somatic complaints and can be associated with an increased sensitivity of treatment. In no case was significant higher 

Table I. Sample characteristics of the group of infertile men (n = 84)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean ± SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of partnership (years)</td>
<td>8.2 ± 3.7</td>
<td>8.0</td>
<td>2–20</td>
</tr>
<tr>
<td>Duration of the desire for a child (years)</td>
<td>3.8 ± 3.0</td>
<td>3.0</td>
<td>0.5–16</td>
</tr>
<tr>
<td>Duration of treatment (months)</td>
<td>22.6 ± 28.4</td>
<td>12.0</td>
<td>1–192</td>
</tr>
</tbody>
</table>
Alexithymia in male infertility

### Table II. Sociodemographic characteristics

<table>
<thead>
<tr>
<th></th>
<th>Healthy men (n = 96)</th>
<th>Infertile men (n = 84)</th>
<th>Male psychosomatic patients (n = 43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years; mean, SD)</td>
<td>31.3 (9.45)</td>
<td>33.6 (4.4)</td>
<td>33.4 (6.7)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education, n (%)</td>
<td>2 (2.1)</td>
<td>1 (1.2)</td>
<td>2 (4.7)</td>
</tr>
<tr>
<td>Secondary school graduate, n (%)</td>
<td>57 (59.4)</td>
<td>49 (58.3)</td>
<td>25 (62.8)</td>
</tr>
<tr>
<td>A levels, n (%)</td>
<td>15 (15.6)</td>
<td>10 (11.9)</td>
<td>6 (14.0)</td>
</tr>
<tr>
<td>University graduate, n (%)</td>
<td>22 (22.9)</td>
<td>24 (28.6)</td>
<td>10 (23.3)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others, n (%)</td>
<td>8 (8.3)</td>
<td>8 (9.5)</td>
<td>4 (9.3)</td>
</tr>
<tr>
<td>Blue-collar worker, n (%)</td>
<td>43 (44.8)</td>
<td>39 (46.4)</td>
<td>19 (44.3)</td>
</tr>
<tr>
<td>White-collar worker, n (%)</td>
<td>35 (36.5)</td>
<td>25 (29.8)</td>
<td>16 (37.2)</td>
</tr>
<tr>
<td>Private entrepreneur, n (%)</td>
<td>10 (10.4)</td>
<td>12 (14.3)</td>
<td>4 (9.3)</td>
</tr>
</tbody>
</table>

### Table III. Results of the 20-item Toronto Alexithymia Scale (TAS-20)

<table>
<thead>
<tr>
<th>TAS-20</th>
<th>Group 1 Healthy mena</th>
<th>Group 2 Infertile menb</th>
<th>Group 3 Male psychosomatic patients</th>
<th>F</th>
<th>P</th>
<th>Group 1 versus 2b</th>
<th>Group 2 versus 3b</th>
<th>Group 1 versus 3b</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>13.4 ± 4.5</td>
<td>14.5 ± 4.6</td>
<td>18.0 ± 5.9</td>
<td>13.7</td>
<td>0.000</td>
<td>NS</td>
<td>3 &gt; 2**</td>
<td>3 &gt; 1**</td>
</tr>
<tr>
<td>F2</td>
<td>11.8 ± 4.3</td>
<td>12.7 ± 4.1</td>
<td>14.4 ± 4.9</td>
<td>5.67</td>
<td>0.004</td>
<td>NS</td>
<td>NS</td>
<td>3 &gt; 1**</td>
</tr>
<tr>
<td>F3</td>
<td>17.9 ± 4.8</td>
<td>19.6 ± 4.2</td>
<td>19.8 ± 5.1</td>
<td>4.21</td>
<td>0.016</td>
<td>2 &gt; 1*</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Sum</td>
<td>43.1 ± 10.1</td>
<td>46.8 ± 11.0</td>
<td>52.2 ± 13.0</td>
<td>10.56</td>
<td>0.000</td>
<td>2 &gt; 1*</td>
<td>3 &gt; 2*</td>
<td>3 &gt; 1**</td>
</tr>
</tbody>
</table>

aMean ± SD.
bPost-hoc comparison.
F(2; 220); *P < 0.05; **P < 0.01.
NS = not significant.

As far as validity is concerned the Symptom Checklist 90-R is reported to have adequate indices of concurrent criterion oriented validity, as well as construct validity.

### Procedure

Mean, SD, median and range of variables are presented as descriptive parameters. To investigate differences between the three groups a one-way analysis of variance was performed (ANOVA). If the overall $F$-test of the ANOVA was significant, we carried out post-hoc comparisons correcting for alpha inflation (Tukey method). Results with $P < 0.05$ indicate statistical significance.

### Results

The statistical results concerning alexithymia in the different groups are presented in Table III.

Regarding the sum value of the TAS-20, the infertile men showed significantly higher scores of alexithymia than the control group of healthy men, but significantly lower scores compared to the psychosomatic outpatients.

Regarding the scores on the different subscales, only the subscale F3 is significantly increased in the group of infertile men. The psychosomatic outpatients show significantly higher scores on the subscales F1 and F2 compared to the healthy men.

In the List of Complaints the study group showed significantly more physical complaints compared to the control group of healthy men ($P < 0.05$; Table IV).

In the Symptom Checklist 90-R there were no significant differences on all nine subscales between the study group and the healthy men. The psychosomatic outpatients were found to have significantly higher scores with respect to all psychopathological symptoms ($P < 0.05$; Table V).

In a further statistical analysis we compared infertile men with high and low scores in alexithymia (median split) concerning their scores on the List of Complaints and the subscales of the Symptom Checklist 90-R. The two groups differed not significantly with respect to sociodemographic information (data from the lower alexithymic group in parentheses). The higher alexithymic group was 33.3 (34.0) years old, SD 5.4 (3.5). They showed the following characteristics concerning formal education and occupation: 2.4% (0%) no formal education, 65.9% (51.2%) secondary school graduate, 14.6% (9.3%) A levels, 17.1% (39.5%) university degree, 48.8% (44.2%) blue-collar worker, 26.8% (32.6%) white-collar worker, 17.1% (11.6%) private entrepreneur, 7.3% (11.6%) others. In the List of Complaints the higher alexithymic men showed significantly more somatic complaints ($P < 0.01$).

The results of the median split on the Symptom Checklist 90-R showed that the infertile men with higher scores in alexithymia had significantly higher scores on the subscales somatization ($P < 0.02$), anxiety ($P < 0.05$), obsessive-compulsive ($P < 0.05$), paranoid ideation ($P < 0.01$) and psychoticsm ($P < 0.01$).

### Discussion

The results of the TAS-20 confirm the hypothesis that infertile men are more alexithymic compared with a group of healthy
men. However, they had significantly lower sum values of alexithymia compared with a group of psychosomatic out-patients, a group known to have a very high prevalence of alexithymia.

We interpret this result in the sense of a tendency of male infertile patients to suppress their feelings as a reaction to the stigmatization diagnosis of infertility rather than a primary deficiency in emotional processing. This interpretation is supported by the fact that only one of the subscales (F3 ‘externally oriented style of thinking’) of the TAS-20 is significantly increased in comparison with the healthy men. Therefore prospective studies are needed to differentiate between primary and secondary alexithymia in infertile men. This state-dependent secondary alexithymia in infertile men would be seen as a transient reaction which passes by after the medical problem has been solved, or, if the problem persists, could become chronic (Freyberger, 1977; Wise et al., 1990). This reaction would be used to ward off painful affects and it could play a protective role as far as depression is concerned.

Thus, in this study infertile men did not show higher levels of depression, which agrees with most previous studies (Menning, 1980; Mahlstedt, 1985; Kedem et al., 1990; Glover et al., 1998). The significantly greater number of psychopathologically relevant symptoms (anxiety, obsessive-compulsive, paranoid ideation) on the Symptom Checklist 90-R in the higher alexithymic infertile men may be seen as an indication for the inadequacy and the psychopathological importance of this adaptational mechanism.

However, there is no possibility in a retrospective study to distinguish clearly between primary and secondary alexithymia (Taylor et al., 1997). Therefore one must be aware of the fact that we cannot exclude on a scientific basis that, at least in a subgroup of our study group, the higher alexithymia score is due to a deficit in affect regulation as a personality trait. Consequently, one might even argue that male infertility may be a symptom or consequence of alexithymia in these patients. Therefore prospective studies are needed to differentiate between primary and secondary alexithymia in infertile men.

The median split could not identify special sociodemographic characteristics associated with the group of higher
aleithymic infertile men. Epidemiological studies concerning the relationship between alexithymia and these variables have demonstrated either no associations or weak positive associations with lower educational level and a lower socioeconomic status (Parker et al., 1989; Kauhanen, 1993; Kirmayer and Robbins, 1993).

Regarding the results of the List of Complaints, infertile men were found to have significantly more somatic complaints than healthy men, i.e. they show a tendency towards somatization. Moreover, the higher alexithymic infertile men (median split) showed significantly more physical complaints in the List of Complaints as well as in the Symptom Checklist 90-R. These results confirm our hypothesis and agree with the results of former studies (Kedem et al., 1990; Dunkel-Schetter and Lobel, 1991). However, why do the psychosomatic patients show a significantly greater amount of physical complaints than the infertile men? One might argue that the degree of psychopathology or specific psychopathological symptoms is influenced by personality traits such as emotional lability or neuroticism, which can be found in psychosomatic patients (Eysenck, 1964; Eggert, 1983). Therefore former empirical studies concerning the relationship between physical complaints measured by the List of Complaints and neuroticism measured by the Maudsley personality inventory reported correlations between 0.6 and 0.7 (Zerssen, 1976).

Furthermore the study group did not differ significantly from the group of healthy men on any subscale of the Symptom Checklist 90-R. Surprisingly there were no differences on the subscale somatization as opposed to the findings in the List of Complaints, although the scales of both tests correlate with \( r = 0.68 \) (Franke, 1995). This result can best be understood by comparing the different construction of the two psychological instruments. The List of Complaints comprises 24 items, which are assessed on a 4-point Likert Scale. The test score is obtained by summing up the item scores. The subscale somatization of the Symptom Checklist 90-R consists of 12 items, which are assessed on a 5-point Likert scale. The test score is obtained by dividing the sum score by the number of items. This different construction leads to a greater variation of test scores in the List of Complaints, which makes possible a better differentiation in relatively small sample groups.

In view of the empirical findings in this study, we assume a close link between alexithymia and somatization in infertile men in the sense that physical complaints can be understood as a symptom of the lack of emotional expression. These findings could have far-reaching clinical implications.

The (highly alexithymic) patient is not able to cope with this traumatic experience by reflecting and talking about it, and if necessary signalling the need for help. Instead, medically unexplained physical symptoms in those patients could indicate that they feel overtaxed to cope with the infertility problem. Therefore it may be helpful for the investigating physician to adopt another strategy in devising subsequent therapy, for example, by informing the patient about the relationship between verbal communication of affective distress and reduced arousal, which appears to have a protective effect against somatic symptom formation (Pennebaker and Susman, 1988; Berry and Pennebaker, 1993). The value of psychotherapy itself may also be discussed with the patient.

In psychotherapy the therapists help these patients to recognize, differentiate, label and manage their own feelings. For this purpose a modified psychodynamic psychotherapy has been developed in recent years (Krystal, 1988). Furthermore in psychotherapy attention is given to the tendency of these patients to misinterpret bodily sensations accompanying states of emotional arousal. Therefore psychotherapeutic interventions are combined with behavioural techniques such as relaxation training, autogenic training or biofeedback, in which the patient becomes aware of the different influences on bodily sensations and learns to self-regulate physical functions (Taylor et al., 1997).

Thus, knowledge about alexithymia could improve diagnosis and therapy in infertile men and could even play a preventive role as far as a physical illness is concerned.

It would be of great interest to investigate whether alexithymia can be found in infertile women as well. Thus in a study concerning stress levels across stages of IVF, the authors suggested as a possible explanation of their findings the suppression of emotions by the affected women during the stressful 2 week waiting period before pregnancy test (Boivin et al., 1995). So alexithymia might be found in women during particularly stressful times of infertility therapy.

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References


R. Conrad et al.


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