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Evidence for a seasonal form of recurrent brief depression (RBD-seasonal)

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Abstract We have established a relationship between recurrent brief depression (RBD) and seasonal affective disorder (SAD) in a cohort of 42 outpatients who presented themselves at a clinic for seasonal affective disorder at the Psychiatry Department of the University of Bonn, Germany. Our preliminary data indicate that 31% of the patients who were diagnosed as suffering from either SAD or its subsyndromal form (S-SAD) can also be categorized as RBD (RBD-seasonal) for a 1-year observation period. During the time span of 1 year, RBD-seasonal patients had a mean number of 20 ± 9 episodes, which were accentuated in fall/winter, outnumbering the ones in spring/summer significantly ($P < 0.001$). The mean duration of each episode was 4.6 ± 2.6 days in the RBD-seasonal group. RBD-seasonal patients experienced seasonal changes as more of a problem and reported a lower percentage of first-degree relatives with a history of depression than the non-RBD-seasonal group.

Key words Recurrent brief depression · Seasonal affective disorder · Major depressive disorder · Light therapy

Introduction

Patients with seasonal affective disorder (SAD) have been characterized as experiencing depression in fall and winter and a remission of these symptoms or even hypomania in spring and summer (Rosenthal et al. 1984; Kasper 1991). The criteria outlined by Rosenthal et al. (1984), as well as those included in DSM-III-R ("seasonal pattern"), specify that SAD is a subgroup of major depression. In

addition, there is a subsyndromal form of SAD (Kasper et al. 1989a) with a milder symptomatology than SAD and in which loss of energy is likely to be more prominent than depressed mood.

The symptomatology and further clinical variables of recurrent brief depression (RBD) (Angst and Dobler-Mikola 1985; Montgomery et al. 1989; Montgomery et al. 1990) have been reported to be similar to major depressive disorder except for the duration of the depressive episodes. The criteria for the diagnosis of RBD are therefore identical to those for major depression except that duration of depressive episodes has been reduced to less than 2 weeks, the duration required for a diagnosis of major depression according to DSM-III-R (American Psychiatric Association 1987) and Research Diagnostic Criteria (RDC, Spitzer et al. 1987). In addition, such episodes must recur monthly over a 1-year period.

Characteristics of a seasonal type of recurrent brief depression (RBD-seasonal)

Although researchers agree that patients with RBD-seasonal are frequently found in RBD clinics, there is only one study to date that has addressed systematically the relationship between seasonal affective disorder and RBD (Kasper et al. 1992). In this investigation, we sought to find out whether there is a type of seasonal depression with a shorter duration of depressive symptomatology, comparable to RBD, since it was our clinical experience that some patients with characteristic difficulties in fall/winter cannot be diagnosed as suffering from SAD because they are not continuously symptomatic for at least 2 weeks, the necessary duration for diagnosis of major depression according to DSM-III-R.

Study design of our report on RBD-seasonal

In this study, we reexamined the actual length of depressive symptomatology on a daily basis over a 1-year period

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in a group of patients previously diagnosed with SAD and its subsyndromal form (S-SAD) [42 patients with a mean age (SD) of 43.2 ± 13.8 years]. These patients fulfilled the criteria for SAD (DSM-III-R, "seasonal pattern", American Psychiatric Association 1987) or its subsyndromal form (subsyndromal SAD = S-SAD, Kasper et al. 1989a). There were 30 patients (71%) with SAD and 12 patients (29%) with S-SAD. Patients had been previously admitted (consecutively) to a clinic specializing in seasonal affective disorders (seasonality clinic) in the Psychiatry Department at the University of Bonn during the 2-year period 1988–1990. As part of the protocol of this clinic, patients were assessed by standardized instruments used in SAD research (Kasper 1991). In order to evaluate the relationship between the existing diagnosis (SAD or S-SAD) of these patients and recurrent brief depression (RBD), we retrospectively studied the duration of the depressive symptomatology that they experienced on a daily basis during 1 year and finally divided them into those with and without RBD. We used two different scales: (1) daily assessment, in which patients had to identify every day of the past year in which they experienced symptoms equivalent to the ones for which they had sought treatment during the past 2 years at our seasonality clinic; (2) and categorical approach, whereby, since patients sometimes claim that they do not remember exactly how they felt in the past year on a daily basis, we also asked them to rate the length and frequency of their symptoms within each season according to a scale in which they had the possibility to choose between the category: 1–3 days, 1 week, 2 weeks, 3 weeks, 1 month, 2 months, and 3 months.

Diagnostic criteria for RBD-seasonal

To determine the frequency of *recurrent brief depression* (RBD) in our total sample, we used modified versions of the criteria developed by Angst et al. (1990b). These criteria were modified insofar as episodes had to recur monthly over a period in fall/winter, rather than over a 1-year time period, as would be the case for RBD without a seasonal pattern. The criteria for the seasonal type (fall/winter) of RBD (RBD-seasonal) were therefore standardized, as is outlined in Table 1.

Detection of SAD with RBD features within the range of SAD patients

During the assessment period of 1 year, there were 13 patients (31% of the total sample) with a duration of depressive episodes shorter than 14 days (*RBD-seasonal*) and 29 patients with a duration of depressive episodes longer than or equal to 14 days (*non-RBD-seasonal*), respectively. There seems to be an inconsistency in our results, since 8 SAD patients have been categorized as suffering from RBD-seasonal, e.g. experiencing a duration of depressive episodes shorter than 2 weeks, and since a longer period than 2 weeks is necessary for the diagnosis of ma-

Table 1 Diagnostic criteria for the seasonal form of recurrent brief depression (RBD-seasonal)

- 1 Diagnostic criteria for major depression (DSM-III-R) concerning mood and number of symptoms which represent a change of previous functioning
- 2 Duration of depression episodes less than 2 weeks
- 3 At least 1–2 episodes per month in fall/winter
- 4 Full remission in spring/summer or depressive episodes in fall/winter should substantially outnumber the ones in spring/summer

nor depression with a "seasonal pattern" (= SAD according to DSM-III-R). This discrepancy can be explained by the fact that we had previously established the diagnosis of SAD not only on the actual length of the symptomatology but also on the basis of retrospective evaluation, and most patients did not specify the exact number of days for which they felt depressed and were more prone to say that they experienced discomfort for the whole time of fall/winter. This tendency of the patients may have been encouraged by our evaluation style, which did not focus specifically on the exact number of days, nor on whether there were intervals of remission when they were not depressed. For the detection of RBD, it therefore seems necessary to ask specifically for the length and duration of each depressive episode within each season, which is not at present part of systematic interview guides like the SCID (Spitzer et al. unpublished) or SADS (Endicott and Spitzer 1978).

Number and duration of depressive episodes

During the time span of 1 year, RBD-seasonal patients had a mean number of 20.2 ± 9.6 episodes compared to 6.1 ± 4.7 episodes in the non-RBD-seasonal group ($t = 5.03$, $df = 14.63$, $P < 0.001$) (see Fig. 1). The mean duration (in days) of each episode was 4.6 ± 2.6 days in the RBD-seasonal group and 21.8 ± 29 days in the non-RBD-seasonal group, respectively ($t = 4.49$, $df = 28.06$; $P < 0.001$). With respect to duration, these data are comparable to those reported by Angst and Dobler-Mikola (1985) and Montgomery et al. (1989). Both studies reported that brief depressive episodes last between 2 and 4 days. The intervals between and the periodicity of RBD episodes in our study were irregular. Since it was one of the aims of our study to compare our findings with those of previous studies, we required as an inclusion criterion that RBD episodes had to recur at least 1–2 times per month over the fall/winter. However, this criterion needs to be considered with caution since the symptomatology of SAD or its subsyndromal form seems to be influenced by various factors like ambient light or the coping-style of the patients, which might itself be related to specific personality variables. The duration of episodes as reported by patients is influenced by numerous factors. Among them, memory and retrospective misinterpretation is a much-discussed problem in studies trying to evaluate the lifetime prevalence of depression (Parker, 1987) and also in research

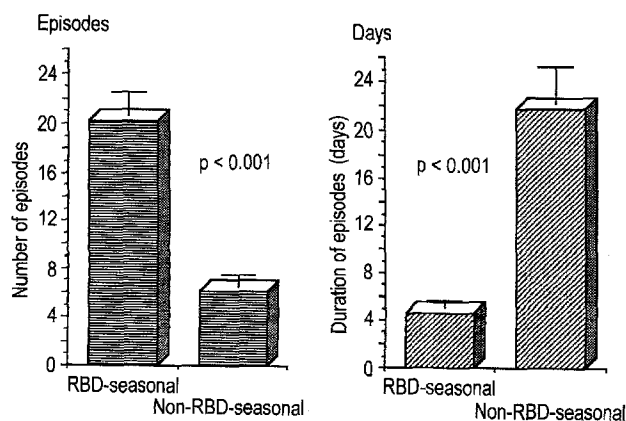


Fig. 1 Number and duration of episodes of patients with SAD and its subsyndromal form, with and without recurrent brief depression (RBD)

dealing with RBD (Angst and Dobler-Mikola 1985; Angst 1990a; Montgomery et al. 1989; Montgomery 1991). This is true, for instance, if age at onset is evaluated by prospective or retrospective studies because patients tend to forget or distort early episodes. However, there are more accurate data for short-term occurrences, like those obtained in our sample in which the evaluation time covered the length of the past year. This assumption is supported by the data of Schrader et al. (1990), who found that in the short term, patients have a tendency to remember severe symptoms more accurately than mild symptoms. Since our retrospective evaluation covered just the length of the past year, we cannot comment as to whether or not the characteristic of RBD is stable over a longer period, e.g. more years. In order to control for the bias of retrospective evaluation, it is necessary to replicate the results of our study using a prospective design. However, there was a large difference in the number of episodes as well as in the daily length of the episodes between the patients with and without RBD-seasonal (see Fig. 1). It therefore seems likely that the bias of retrospective evaluation might have affected the exact number of RBD cases in our patient sample, but not the fact that RBD-seasonal patients exist.

Objective and subjective measurements of severity

Although the seasonality score (summary of the items of question number 12 of the SPAQ, see also Kasper et al. 1989c) did not differ between the two groups of RBD patients (seasonal and nonseasonal, 14.5 ± 2.9 and 14.0 ± 4.7 ; $t = 0.36$, $df = 33$, $P = 0.7$), it was also apparent that the RBD-seasonal group of patients experienced seasonal changes significantly ($G = 7.09$, $df = 1$, $P < 0.01$) more as a marked, severe, or disabling problem than the non-RBD-seasonal group (see Table 2, question number 18 of the SPAQ). There was no difference in severity of depression between the seasonal patients with and without RBD. During the time of their depression, both groups were rated as mildly depressed, according to the total score of

HDRS, which seems to be a characteristic for SAD (Kasper 1991) but not for RBD (Angst et al. 1990b; Montgomery 1991). Although there was no difference according to the objective measurement of severity of depression between the patients with or without RBD, there was a difference according to the degree of severity of how they experienced the changes with the seasons. It was apparent that RBD-seasonal patients experienced these changes to a higher degree. One explanation could be that this different judgment is based on the repeated experience of change from a healthy state to depression within a short time period. This interpretation is supported by the assumption that the healthy state is set as reference stimulus after each remission of depression. Furthermore, this distinct perception might also be indicative of a different underlying pathophysiology between these two groups. This notion is supported by the finding that differences in the perception of pain are reported between groups of depressed patients, which are reflected in a specific psychophysiological pattern using the augmenting/reducing paradigm of evoked potentials (Buchsbaum et al. 1980).

Sensitivity to weather variables and further characteristics

There were no differences between the two groups of patients (with and without RBD) with regard to their sensitivity to weather variables. Both groups noted that they felt worse on short, gray-cloudy, and humid days and that they felt better on long, sunny, and dry days. Furthermore, seasonal weight changes were not different between the two groups. The absolute duration of sleep length as rated by item 16 of the SPAQ was markedly longer during fall and winter in both groups. In comparison, however, RBD-

Table 2 Seasonal characteristics of the subgroups of SAD and S-SAD patients with and without the characteristic of recurrent brief depression (RBD)

SPAQ-Items	Seasonal-RBD (n = 13)	Non-RBD- seasonal (n = 29)
Seasonality score ^a	14.5 ± 2.9	14.0 ± 4.7
Absolute length of sleep (hours) (SPAQ item 16) ^b	8.3 ± 1.5	7.6 ± 1.3
Changes with the seasons are a problem (SPAQ item 18)		
Mild or moderate	0%	8%
Marked ^c	64%	25%
Severe or disabling ^c	36%	37%

SPAQ: Seasonality Pattern Assessment Questionnaire (SPAQ, Rosenthal et al. 1987)

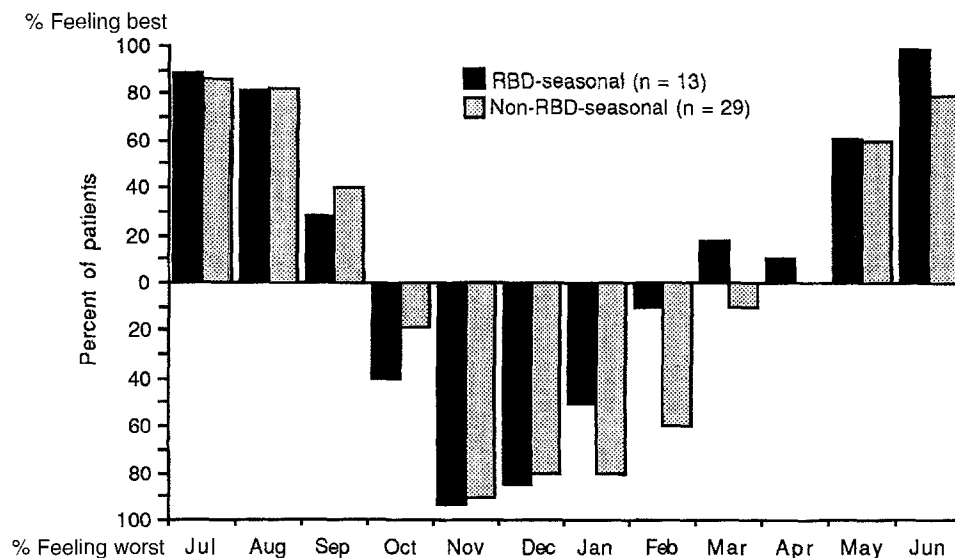
RBD: Recurrent brief depression (Angst et al. 1990)

^a As measured with the Seasonal Pattern Assessment Questionnaire (SPAQ, Rosenthal et al. 1987)

^b Significant ($P < 0.05$) differences between RBD-seasonal and non-RBD-seasonal

^c Significant ($P < 0.01$) differences between RBD-seasonal and non-RBD-seasonal (marked, severe, or disabling)

Fig. 2 Percentage of patients who report “feeling worst” or “feeling best” per month. Questions 13 A and 13 H of the Seasonal Pattern Assessment Questionnaire (SPAQ, Rosenthal et al. 1987)



seasonal patients slept significantly longer when all the seasons were taken together (8.3 ± 1.5 versus 7.6 ± 1.3 ; $t = 2.81$, $df = 113$; $P < 0.01$).

Course of symptomatology

Figure 2 depicts the monthly distribution of the characteristic “feeling worst/feeling best” (derived from questions 13 A and 13 H of the SPAQ) in the groups of patients with and without RBD-seasonal. The profile in both groups exhibits an onset of “feeling worst” in October, an accentuation in November, December, and January, and an offset of “feeling worst” in March. However, it is apparent that patients with RBD-seasonal had their worst months in November and December and tended to feel better by January and February, both of which were rated as times of “feeling worst” by a higher percentage of the non-RBD-seasonal group. It is also evident from Fig. 2 that early spring months were not rated as the best ones by most patients, compared to the summer months, which were most often experienced as the best. This distribution indicates that patients with RBD-seasonal seek treatment specifically in November and December, a time when there is also the shortest photoperiod. This pattern might be further indicative that patients with RBD-seasonal are especially susceptible to environmental light, since the increase in photoperiod is associated with an amelioration of their symptomatology. However, in studies conducted in North America (Kasper et al. 1989c), it is apparent that the peak of feeling worst shifts from January/February to November/December. Since most studies of SAD have been carried out in Washington DC (39° north of the equator), it might well be that the latitude of the area in which this study was conducted (Bonn: 50° north of the equator) might have influenced the results in the above-mentioned direction.

Frequency of seasonal to nonseasonal episodes within RBD

All of our patients with SAD or its subsyndromal form fulfilled the DSM-III-R criterion of a 3:1 ratio between seasonal and nonseasonal episodes. There was a subgroup of our patients with SAD or its subsyndromal form who had depressive episodes in spring/summer, too, but the number of these episodes was significantly lower in these two seasons and was therefore substantially outnumbered by the episodes in fall/winter. Previous literature of SAD does not specifically indicate in detail how patients felt in spring/summer and may therefore have overlooked the fact that patients are also symptomatic at this time of the year, when there are, for instance, gray and cloudy days, especially for an extended period. It therefore might well be that periods with this characteristic are able to trigger depressive symptomatology in vulnerable individuals even in summer. The dependence of changes in mood and behavior on these environmental parameters in patients with fall/winter difficulties is compatible with the notion that seasonality is a marker of vulnerability that is uncovered if these individuals are placed in an environment with light deficiency (Kasper et al. 1989a).

Familial factors in RBD-seasonal

We found that patients with RBD-seasonal had a lower percentage of first-degree relatives suffering from depression compared to the patients without RBD-seasonal. Previous studies detected no differences in the rates of a positive family history between patients with and without nonseasonal RBD (Angst et al. 1990b). For patients with SAD, on the other hand, there have been higher rates of a positive family history reported than for nonseasonal depressives (Kasper and Kamo 1990). We can confirm this observation for the total group of 42 seasonal patients in the present investigation. It would therefore be worthwhile to examine this relationship in a larger sample, because to-

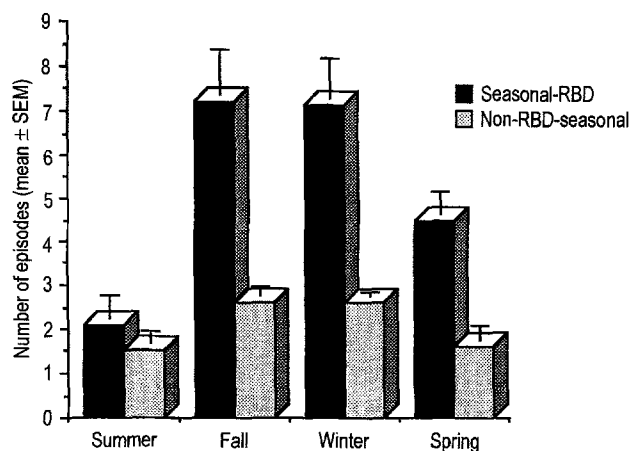


Fig. 3 Number of episodes in each season of the year for patients ($n = 12$) with seasonal and nonseasonal types of recurrent brief depression (RBD). There is a significant ($P > 0.001$) difference between the fall/winter and spring/summer months for the patients with RBD-seasonal. The duration of episodes (in days) was significantly ($P > 0.05$) longer in fall/winter compared to spring/summer in the group of non-RBD-seasonal patients. This explains the fact that the number of episodes is quite similar throughout the year

gether with the RBD pattern itself, this could indicate that RBD-seasonal might have another etiology than the non-seasonal form of RBD.

Treatment for RBD-seasonal

Six patients with RBD-seasonal (5 SAD and 1 S-SAD; mean age 43.3 ± 6.5 years) participated in a controlled trial of light therapy with full-spectrum bright light (3000 Lux) or dim light (100 Lux), which was conducted in a balanced, randomized cross-over fashion (1 week each condition without wash-out period between these two treatment conditions, 2 hours of light therapy daily, either in the morning or evening hours). During light therapy, patients were assessed by blind raters by means of the HDRS as well as with other rating instruments that are commonly used in light therapy studies (Kasper 1991), like the Supplement scale and the Hypomania scale. After 1 week of treatment with bright light, there was a 47-% mean reduction in HDRS scores and an 87-% mean reduction in HDRS-Supplement scores. The corresponding numbers for the dim light condition were -1% and -18%, respectively (see Fig. 4). From a treatment perspective, it was apparent that these patients are not likely to receive prophylactic treatment. A reason for this might be that their difficulty is not considered to be severe enough, since the patients remit on a regular basis. Nevertheless, the number of phases indicate that a specific treatment strategy should be found. We do not know if light therapy with bright artificial light itself has been especially beneficial for patients with RBD-seasonal, since they experienced a mean duration of 4.9 days of depressive symptomatology. It could therefore have been that the symptomatology would have been remitted within the 1-week time of the

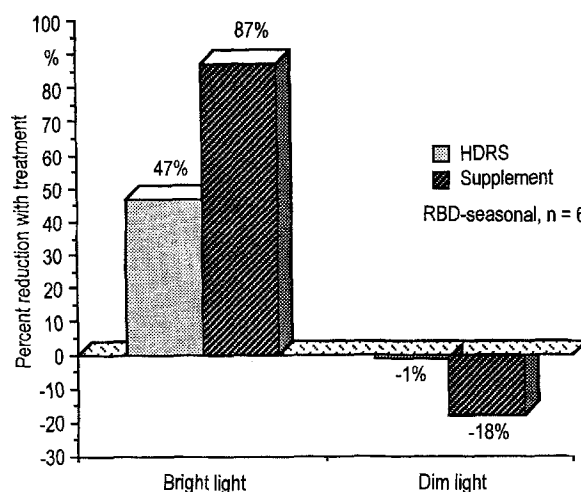


Fig. 4 First exploratory results of the effects of light therapy with either bright (3000 lux) or dim (100 lux) light in 6 RBD-seasonal patients

scheduled light therapy. However, this explanation seems to be unlikely, since there was no such response with the dim light condition.

Conclusions

Our data indicate that there is a sizable subgroup of patients with diagnosed fall/winter difficulties, e.g. SAD or its subsyndromal form, who can be characterized as suffering from a seasonal type of RBD. Since we studied only a small number of patients retrospectively, our data have to be regarded as preliminary and exploratory. Nevertheless, they may help researchers to better understand the fluctuations of depressive symptomatology in relation to seasonal variables and to establish specific treatment strategies for patients with and without a RBD-type of fall/winter depression. Our data may have implications for the way in which patients with fall/winter difficulties (SAD and its subsyndromal form) are diagnosed, rated, and treated. The introduction of the diagnosis of RBD-seasonal indicates that there is a subgroup of patients suffering from a distinct disorder and not just from mild mood swings, as might be supposed because the duration is shorter. The type of ratings in RBD-seasonal should take into account that the evaluation period usually does not exceed 3 days. There is as yet no adequate treatment for RBD (Montgomery 1991). Light therapy might be an appropriate treatment for RBD-seasonal, if our observations are confirmed in future studies that take into account the problem of differentiation between spontaneous remission and treatment effect. Nevertheless, since light therapy does not work for all SAD patients and since it is not accepted by all patients with fall/winter difficulties – due, for instance, to its time-consuming nature – it is necessary to initiate therapy protocols with different kinds of treatments that have been effective in fighting major depression.

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