THE COURSE OF ANXIETY, DEPRESSION AND DRINKING BEHAVIOURS AFTER COMPLETED DETOXIFICATION IN ALCOHOLICS WITH AND WITHOUT COMORBID ANXIETY AND DEPRESSIVE DISORDERS

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Abstract — We studied the associations between comorbid anxiety and depressive disorders in treated alcoholics, the course of current anxiety and depression during the early and late post-detoxification periods, and drinking behaviours after discharge. Lifetime psychiatric comorbidity was assessed in 100 alcoholics using the Composite International Diagnostic Interview (CIDI). Three subgroups defined as group DA (comorbid depressive and anxiety disorders, $n = 15$), group A (anxiety disorder only, $n = 23$), and group NO (no comorbid disorder, $n = 62$) were studied. Beginning 21 ± 13 days after cessation of drinking, state anxiety (STAI-X1), trait anxiety (STAI-X2) and depression (BDI) were assessed once per week (t1 to t4) and once more 6 months after discharge (t5, $n = 68$). The severity of psychopathology decreased during the first 4 weeks after detoxification in all subgroups. However, trait anxiety remained at higher levels in both the comorbid subgroups from t1 to t4. In the follow-up sample, 60.5% of the non-comorbid subjects remained abstinent, but only 26.7% of all comorbid patients and only 12.5% of those with comorbid depressive disorder plus severe current trait anxiety or depression at t1. Independent of their comorbidity status, relapsers at t5 had already reported more trait anxiety than abstainers at t1. We conclude that severe trait anxiety persisting after 3 weeks of abstinence, comorbid depressive and/or anxiety disorders, and combinations of these with moderate or severe current anxiety and depressive states represent the greatest risks of relapse and therefore may indicate a treatment need.

INTRODUCTION

Comorbid depressive as well as anxiety disorders (as categorical diagnostic entities) are repeatedly found in high proportions among treatment-seeking subjects with alcohol-related disorders. Rates of 15–38% for major depression, 11–17% for dysthymia, 6–33% for phobias, 3–52% for generalized anxiety disorders, and 2–21% for panic disorders have been reported (Hesselbrock *et al.*, 1985; Black *et al.*, 1987; Powell *et al.*, 1987; Ross *et al.*, 1988; Herz *et al.*, 1990; Tomasson and Vaglum, 1995). A dimensional assessment of current anxiety and depression (sometimes called current psychopathology in this paper) was most often provided in psychopharmacological studies. A number of these studies reported a substantial decrease of anxiety and depression within the early detoxification period, i.e. in the first 4 weeks after cessation of drinking, in the verum as well as in placebo-treated patients (West and Gocka, 1986; Brown and Schuckit, 1988; Schuckit *et al.*, 1990; Thevos *et al.*, 1991; Malcolm *et al.*, 1992; Heinz *et al.*, 1996; Lejoyeux, 1996). In addition, a high level of psychopathology was found to be associated with an unfavourable course of alcoholism by some (McLellan *et al.*, 1983; McLellan, 1986; Rounsaville *et al.*, 1987; O'Sullivan *et al.*, 1988) but not by others (Schuckit *et al.*, 1990; Heinz *et al.*, 1996). Furthermore, there are only few and contradictory empirical data about the interrelation of comorbid disorders and the course of current psychopathology after cessation of drinking (Schuckit *et al.*, 1990; Thevos *et al.*, 1991; Brown *et al.*, 1995), and these results were controlled neither for demographic nor for alcohol-related characteristics.

In sum, an overall decrease of dimensionally assessed psychopathology in alcoholics during the detoxification period was well documented. There did not seem to be substantial differences with regard to current psychopathology between later abstainers and relapsers, but, unfortunately, most authors considered only the early detoxification period. Furthermore, many studies did not assess comorbid disorders and/or considered small samples with only a small variation of psychopathology. In their review of research on pharmacotherapy of alcoholism Litten *et al.* (1996) concluded with regard to comorbidity research that 'results that could inform clinical pharmacotherapy decisions are quite limited'.

The purpose of this investigation was: (1) to study the course of current anxiety and depression in the early post-detoxification period (4–6 weeks after cessation of drinking) and in the late post-detoxification period (up to 6 months later), in alcoholics with and without lifetime comorbid anxiety and depressive disorders; (2) to analyse the impact of lifetime comorbid disorders and initial anxiety and depression on the course of psychopathology and of abstinence in the late post-detoxification period; (3) to draw conclusions for treatment indications.

SUBJECTS AND METHODS

Procedure

All subjects participated in a 3-week in-patient motivational treatment programme after completing their detoxification in our department. This programme is based on the concept of readiness to change (DiClemente and Hughes, 1990) and represents a structured programme of cognitive–behavioural group therapy supplemented by alcohol-related information,

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relapse prevention role plays, exposition exercises, ergotherapy, and a group session for relatives. The programme focuses on alcohol-related problems, but not on additional psychological problems.

Patients were only admitted to this programme if they completed the detoxification and were free from withdrawal symptoms, i.e. they scored <3 on the Alcohol Withdrawal Scale (Wetterling *et al.*, 1997) at three consecutive measures with 4-h interval between each two measures. During the motivational treatment, breath analysis is applied at least three times per week and, in addition, every time after returning to the ward when not being observed by the staff during their absence.

At admission, patients were asked to take part in the study, and written informed consent was obtained. Patients completed the computerized version of the CIDI (see below) and the self-rating scales were completed for the first time (t1). This procedure was repeated three more times, once per week, throughout treatment (t2 to t4), and once again 6 months after discharge (t5). The follow-up questionnaire was mailed up to three times, and up to three attempts were made to contact the patients by telephone during the same period. If the address had changed (questionnaire was returned undelivered), the new address was traced with the help of the local district office and the complete follow-up procedure was repeated.

Instruments

Patients completed self-rating instruments (pencil-and-paper versions) each week (t1 to t4) during the treatment programme, beginning with the day of entry. State and trait anxiety were assessed by means of the State Trait Anxiety Inventory (STAI-X1 and STAI-X2, Spielberger *et al.*, 1970; German version by Laux *et al.*, 1982) and depression by means of the Beck Depression Inventory (BDI, Beck and Steer, 1987; German version by Hautzinger *et al.*, 1994). Comorbid psychiatric disorders were assessed by means of the Composite International Diagnostic Interview (CIDI, Robins *et al.*, 1989; Pfister *et al.*, 1990; Cottler *et al.*, 1991; Wittchen and Semler, 1991). The computerized CIDI auto-version was applied and well accepted by the patients. This version produces computerized DSM-III-R (American Psychiatric Association, 1987) core diagnoses. Apart from section I (alcohol-related disorders) and section L (substance-related disorders), section D (anxiety disorders) and sections E/F (affective disorders) were applied. Drinking history was also obtained by means of a standardized questionnaire, and the patients' reports were controlled on the basis of additional information by the detoxification staff, family practitioners and relatives. At the follow-up (t5) point, subjects were asked to report the number of drinking days and the amount of alcohol consumed on an average drinking day.

Subjects

We studied 133 alcohol-dependent patients, who were consecutively admitted to the motivational treatment programme after detoxification in 1996. Thirty-three subjects were excluded from analysis, because of the following circumstances: incomplete data sets (t1 to t4, $n = 15$), transferrals to other departments because of severe medical conditions ($n = 4$), irregular discharges because of repeated lapses or one severe relapse during the weekends at home ($n = 7$), current substance-related disorders other than alcohol ($n = 7$). These latter patients were excluded because multiple drug abuse was previously identified as a major confounding factor in investigating the interaction of panic states and alcoholism (Johannessen *et al.*, 1989). All remaining patients ($n = 100$) were free from psychotropic medication during participation in the in-patient motivational programme (t1 to t4).

Of the 100 subjects included, 75% were male, the mean ($\pm$ SD) age was 44.5 ± 11.1 years; 69.0% were married or lived with a partner and 42.0% were unemployed (Table 1). On average, alcohol-related problems had started about 6 years before the present admission (at age 38.9 ± 12.4 years). Patients had had their last alcoholic drink 21.1 ± 13.3 days before t1 and were free from psychotropic drugs.

Lifetime prevalence of comorbid lifetime depressive and/or anxiety disorders was 38.0%, and the 1 year prevalence was 30.0%. According to their comorbidity patterns, the subjects were divided into three subgroups. At least one depressive

Table 1. Demographic and other characteristics of the study groups

Characteristics	Total ($n = 100$)	Lifetime comorbid disorder			χ^{2a} (df = 2)
		Depression + Anxiety (DA) ($n = 15$)	Anxiety (A) ($n = 23$)	No diagnosis (NO) ($n = 62$)	
Male (%)	75.0	86.7	69.6	74.2	1.6
Age (mean $\pm$ SD)	44.5 ± 11.1	36.9 ± 8.0	44.3 ± 13	46.4 ± 10.4	9.83**
Status (%)					10.34
Never married	25.0	53.3	13.0	22.6	(df = 6)
Married, partnership	44.0	33.3	56.5	41.9	
Divorced, separated	29.0	13.3	30.4	32.3	
Widowed	2.0	0.0	0.0	3.2	
Unemployment (%)	42.0	80.0	34.8	35.5	10.67**
Age of onset of alcohol-related problems (mean $\pm$ SD)	38.9 ± 12.4	30.5 ± 7.4	38.8 ± 15.1	41.0 ± 11.6	9.73**
First help-seeking because of alcohol problems (age) (mean $\pm$ SD)	40.2 ± 12.4	32.7 ± 8.6	39.7 ± 13.9	42.2 ± 12.0	9.59**
No. of in-patient detoxification treatments (mean $\pm$ SD)	3.0 ± 7.1	7.1 ± 15.8	3.0 ± 5.1	1.9 ± 3.1	0.16
Days since cessation of drinking (mean $\pm$ SD)	21.1 ± 13.3	22.4 ± 14.8	22.0 ± 15.6	20.4 ± 12.2	0.13

[a] χ^2 Test and Kruskal–Wallis test corrected for ties, **$P < 0.01$.

disorder was found in 15.0%, and all of these patients also had an anxiety disorder (DA group). Twenty-three per cent had at least one anxiety disorder but no depressive disorder (A group). The specific diagnoses of both these subgroups are given in Table 2; 62% had presented without any comorbid diagnosis (NO group).

The DA patients were younger than the A and the NO patients, had been younger at the onset of alcohol-related problems and when they sought help for the first time (Table 1). The rate of unemployment was higher among DA patients. No differences were found with respect to family status, number of previous detoxification treatments and the number of days since cessation of drinking.

Sixty-eight of the 100 subjects studied completed sufficiently the posted questionnaire at the follow-up; the other patients refused ($n = 20$), could not be located ($n = 4$), or failed to sufficiently complete the questionnaire ($n = 8$). No significant differences between follow-up subjects and drop-outs were found with regard to demographic characteristics and alcohol history, and 86.7% of the DA patients, 73.9% of the A patients, and 61.3% of those without comorbid disorders completed the follow-up ($\chi^2 = 4.4$, df = 2, not significant).

Data analysis

The CIDI data were analysed by the CIDI Computer Programme (Pfister *et al.*, 1990), which computes DSM-III-R diagnoses. These were then entered into the SPSS programme (Nie *et al.*, 1975), Windows version 5.0.1. All further data were directly entered into SPSS and analysed. The following statistical analyses were performed: χ^2-test with Yates' correction of continuity and Kruskal–Wallis test with Z-values corrected for ties. Multivariate analyses of variance (MANOVA) were performed to analyse effects of time (i.e. effects within subjects) and effects between subgroups. Effects of time (Pillais trace analyses are reported) were controlled for comorbid diagnoses, sex, and the interaction of diagnoses × sex. Effects between comorbid groups were controlled for age and days since cessation of drinking as covariates (regression analysis), as well as for sex and diagnosis × sex. MANOVAs were not controlled for age at onset of alcohol-related problems, because these data correlated highly with the current age (Spearman's $r = 0.88$). Days since cessation of drinking were not included in the analyses given here, because they did not reveal any associations when entered instead of age. Analyses

of variance with covariates entered first (ANCOVA) were performed to analyse the current (dimensional) psychopathology in relapsers and abstainers. Significance levels were Bonferroni-adjusted for multiple analyses, with each MANOVA regarded as one statistical procedure. Thus, results were considered as significant when $P \leq 0.005$.

RESULTS

The early post-detoxification period

State anxiety rarely declined within the 3 weeks of observation (t1 to t4), and no difference was found between any two of the three comorbid subgroups (Table 3). Trait anxiety substantially declined in all groups from t1 to t4 ($P < 0.0005$), but remained at a higher level in the DA group, followed by the A and NO groups ($P = 0.004$). In all groups, a rather dramatic decline of BDI depression was also found, but without significant differences between any two of the three comorbid groups (Table 3). Time (course), sex, diagnoses, and interactions of these variables did not reveal any relevant influence on these results. Although a substantial proportion of the patients still reported relevant anxiety and/or depression scores 3 weeks after cessation of drinking (t1), the corresponding rates 3 weeks later (t4) were comparable to those in the general population: 42% (t1) versus 25% (t4) of the participants reached a trait anxiety score higher than the 75th percentile in the general population (43 for males/40 for females; Laux *et al.*, 1982). Of all subjects, 27% (t1) versus 11% (t4) were mildly to moderately depressive (BDI score 11 to 17) and an additional 10% (t1) versus 2% (t4) were severely depressive (BDI score ≥18, Hautzinger *et al.*, 1994).

The late post-detoxification period

In order to avoid a bias by drop-outs, results at t5 (6 months after t4) were compared to data at t4 only in those subjects who completed the follow-up questionnaires, although results at t4 did not differ between drop-outs and completers (see Tables 3 and 4 for comparison). Trait anxiety revealed lower scores in the NO group compared with both the comorbid groups at t4 and t5 ($P = 0.01$; Table 4), but the significance level according to the Bonferroni adjustment ($P \leq 0.005$) was not completely reached. Depression, as measured on the BDI, showed a tendency to increase between t4 and t5 ($P = 0.02$),

Table 2. DSM-III-R comorbid disorders in 100 alcohol-dependent subjects and in the two comorbid subgroups

Diagnosis	Category code	Lifetime (12 months) Total ($n = 38$)	Lifetime prevalence	
			Depression + Anxiety (DA) ($n = 15$)	Anxiety (A) ($n = 23$)
Major depression[a]	296.20 to 296.33	11 (10)	11	0
Bipolar disorder, mixed	296.61	1 (1)	1	0
Dysthymia	300.4	6 (4)	6	0
Panic disorder	300.01	3 (3)	1	2
General anxiety disorder	300.02	3 (2)	2	1
Panic disorder with agoraphobia	300.21	5 (5)	1	4
Agoraphobia	300.22	11 (8)	4	7
Social phobia	300.23	18 (13)	7	11
Simple phobia	300.29	15 (8)	6	9

[a]Values are numbers (%); single episode or recurrent.

Table 3. The course of state anxiety (STAI-X1), trait anxiety (STAI-X2), and depression (BDI) in the three comorbidity defined subgroups

| | Lifetime comorbidity subgroup (mean ± SD) | | | MANOVA | |
	DA (n = 15)	A (n = 23)	NO (n = 62)	Effects of time (Pillais trace)	Effects between comorbid groups
STAI-X1				Main effect:	Main effect:
t1[b]	43.5 ± 7.7	41.3 ± 11.3	38.9 ± 7.3	time: $F = 3.1$, ns	diagnosis: $F = 1.3$, ns
t2	40.8 ± 8.3	37.3 ± 7.3	36.5 ± 8.8	Interactions:	Covariates and interaction:
t3	36.6 ± 9.3	38.6 ± 11.8	35.3 ± 8.1	time × sex: $F = 1.3$, ns	age[a]: $F = 1.3$, ns
t4	38.8 ± 9.1	37.0 ± 12.7	35.6 ± 8.8	time × diagnosis: $F = 1.3$, ns	sex: $F < 0.1$, ns
				time × sex × diagnosis: $F = 1.9$, ns	diagnosis × sex: $F = 2.0$, ns
STAI-X2				Main effect:	Main effect:
t1[b]	49.1 ± 11.5	46.6 ± 9.2	38.5 ± 7.8	time: $F = 11.1$, $P < 0.0005$	diagnosis: $F = 5.8$, $P = 0.004$
t2	45.5 ± 9.8	40.7 ± 10.2	35.4 ± 9.2	Interactions:	Covariates and interaction:
t3	44.1 ± 7.9	39.5 ± 11.3	34.0 ± 9.1	time × sex: $F = 0.1$, ns	age[a]: $F = 4.1$, $P = 0.045$
t4	42.3 ± 11.5	39.8 ± 12.0	33.8 ± 9.2	time × diagnosis: $F = 0.7$, ns	sex: $F = 0.1$, ns
				time × sex × diagnosis: $F = 0.5$, ns	diagnosis × sex: $F = 3.0$, $P = 0.05$
BDI				Main effect:	Main effect:
t1[b]	13.8 ± 6.0	12.4 ± 6.8	8.4 ± 5.9	time: $F = 39.5$, $P < 0.0005$	diagnosis: $F = 3.9$, ns
t2	9.0 ± 7.4	8.2 ± 5.6	5.5 ± 5.5	Interactions:	Covariates and interaction:
t3	8.3 ± 6.9	6.7 ± 5.7	3.9 ± 5.4	time × sex: $F = 2.7$, $P = 0.05$	age[a]: $F = 0.8$, ns
t4	6.8 ± 6.4	4.9 ± 5.1	3.1 ± 4.6	time × diagnosis: $F = 1.8$, ns	sex: $F = 0.3$, ns
				time × sex × diagnosis: $F = 2.3$, $P = 0.04$	diagnosis × sex: $F = 1.3$, ns

[a]Age as covariate (entered first), regression analysis; correlation (Spearman's r) of current age × age at onset of alcohol-related problems $r = 0.88$;
[b]21 ± 13 days after cessation of drinking.
ns, not significant.

Table 4. The course of psychopathology in the three comorbidity defined subgroups (n = 68) from t4 (6 weeks after cessation of drinking) to t5 (8 months after cessation of drinking)

| | Lifetime comorbidity subgroup (mean ± SD) | | | MANOVA | |
Diagnosis	DA (n = 13)	A (n = 17)	NO (n = 38)	Effects of time	Effects between comorbid groups
Trait anxiety (STAI-X2)				Main effect:	Main effect:
t4[a]	41.2 ± 12.0	40.5 ± 11.2	32.3 ± 9.4	time: $F = 1.7$, ns	diagnosis: $F = 4.8$, $P = 0.01$
t5[b]	42.2 ± 12.2	43.1 ± 13.1	33.2 ± 11.0	Interactions:	Covariates and interaction:
				time × sex: $F = 0.9$, ns	age: $F = 4.6$, ns
				time × diagnosis: $F = 0.4$, ns	sex: $F = 0.6$, ns
				time × sex × diagnosis: $F = 0.5$, ns	diagnosis × sex: $F = 4.0$, ns
Depression (BDI)				Main effect:	Main effect:
t4	6.3 ± 5.8	5.4 ± 4.9	2.8 ± 3.6	time: $F = 5.9$, $P = 0.02$	diagnosis: $F = 1.0$, ns
t5	6.3 ± 6.3	10.9 ± 7.9	6.3 ± 8.0	Interactions:	Covariates and interaction:
				time × sex: $F = 0.1$, ns	age: $F = 1.3$, ns
				time × diagnosis: $F = 0.5$, ns	sex: $F < 0.1$, ns
				time × sex × diagnosis: $F = 1.1$, ns	diagnosis × sex: $F = 1.4$, ns

[a]42 ± 13 days after cessation of drinking; [b]6 months after t4.
ns, not significant.

which was due to changes in the A and NO groups, but not in the DA group. The proportions of patients with pathological scores of trait anxiety and mild to moderate BDI depression did not significantly differ between t4 and t5 (trait anxiety 29.4 versus 27.9%, mild or moderate depression 8.8 versus 14.7%), but it is noteworthy that none was severely depressive at t4, while the depression rate was 8.8% 6 months later (t5).

Comorbid disorders, current psychopathology and relapse

Of the follow-up patients, 31 (45.6%) reported being still completely abstinent (0 days of any alcohol consumption) since discharge from treatment and 37 (54.4%) reported having consumed alcohol for ≥1 day (mean 43.6 ± 55.1, range 1–180). Abstinence rates where somewhat lower in the DA group (30.8%) and in the A group (23.5%), but higher in patients without comorbidity (60.5%, $\chi^2 = 8.2$, df = 2, $P < 0.02$). Because these results could have been influenced by help-seeking behaviours, they were separately analysed for the three comorbidity subgroups: no significant differences were found for either visiting self-help groups ($\chi^2 = 0.5$, df = 2, not significant) or for alcohol-related treatments ($\chi^2 = 0.9$, df = 2, not significant).

Table 5. Trait anxiety (STAI-X2) and depression (BDI) 3 weeks (t1) and 8 months (t5) after index cessation of drinking in relapsers and abstainers (reported at t5)

Group	STAI-X2	ANCOVA (F)	BDI	ANCOVA (F)
t1				
Abstainers ($n = 31$)	37.1 ± 7.4	7.68^b	7.8 ± 5.7	3.53^a
Relapsers ($n = 37$)	43.9 ± 10.2	$P < 0.007$	10.9 ± 5.9	ns
t5				
Abstainers ($n = 31$)	30.6 ± 8.5	20.6^a	4.6 ± 5.3	9.91^a
Relapsers ($n = 37$)	43.0 ± 12.7	$P < 0.0005$	9.8 ± 8.8	$P = 0.003$

Values are means ± SD.
[a,b]Analysis of covariance (ANCOVA), *F*-values of main effects are reported; covariates were entered first (sex, age, family status, employment status);
[a]covariates not significant (ns); [b]age: $F = 9.01$; $P = 0.004$.

Later relapsers (at t5) had reported more trait anxiety than abstainers already at t1, but no difference was found with regard to the current BDI depression scores at t1 (Table 5). At t5, relapsers reported significantly more current trait anxiety and depression scores than abstainers and the number of drinking days correlated with STAI-X2 scores ($r = 0.44$, $P = 0.006$) but not with BDI scores ($r = 0.31$, not significant).

DISCUSSION

Anxiety and depression in alcoholics were repeatedly found to decrease during the first weeks after cessation of drinking. In this (not representative) investigation we studied the course of anxiety and depression in the post-detoxification period in comorbid and non-comorbid subjects and, in addition, we studied the impact on later drinking behaviours. The results led to five main conclusions.

(1) Whereas some authors reported state anxiety to be more sensitive than trait anxiety to changes over time in alcoholics during the early detoxification period (Schuckit *et al.*, 1990; Thevos *et al.*, 1991), our results showed that state anxiety rarely decreased in the post-detoxification period and did not differ between subjects with and without comorbid anxiety disorders. In agreement with the findings by Ludenia *et al.* (1984), however, our results demonstated a substantial decrease of trait anxiety and depression in the (early) post-detoxification period. Six weeks after cessation of drinking (at t4), the proportion of subjects with pathological levels of trait anxiety and depression was comparable to that in the general population (Laux *et al.*, 1982; Hautzinger *et al.*, 1994).

(2) Trait anxiety remained at a significantly higher level in patients with lifetime comorbid anxiety disorders (which were also current disorders in 71% of the afflicted subjects). This finding coincides with the concept of trait anxiety, which represents a susceptibility of the subject to estimate new or unknown stimuli as threatening.

(3) During the follow-up period (from the 6th week to the 8th month after admission for detoxification), we found no substantial change in mean trait anxiety scores and only a minor increase of depression in alcoholics with and without anxiety and/or depressive disorders. In addition, the proportions of patients with severe anxiety scores remained stable, while 8.8% of the patients reported severe symptoms of depression, none of whom had done so at the time of discharge (t4) and only one of whom had already done so at t1. This result confirms the findings of Brown and Schuckit (1988) and might indicate the post-detoxification period as a risk period for the onset of depressive syndromes.

(4) Only 40% of our patients without comorbid disorders reported lapses or relapses during the follow-up period as opposed to 69% of those with additional anxiety disorders and 77% of the patients with anxiety plus depressive disorders. Recently, Greenfield *et al.* (1998) also found major depression at treatment entry, but that depressive BDI symptoms did not predict shorter intervals between discharge and post-treatment relapses in alcohol-dependent patients. On the other hand, if current psychopathology was considered separately, only the severity of trait anxiety 3 weeks after cessation of drinking (t1) differed between later abstainers and relapsers.

(5) As in previous investigations we found significantly higher degrees of anxiety and depression in relapsers than in abstainers 6 months after discharge (t5, Table 4). However, relapsers had already relapsed by then (t5). Thus, our data are a limited contribution to clarifying the chronology of onset: is the increased psychopathology a cause or a consequence of relapse or both? On the one hand, pathological trait anxiety might directly or indirectly lower the threshold to drink. Learning stress-dampening effects of alcohol (George *et al.*, 1990; Pohorecky, 1991) might be one relevant underlying pathway. On the other hand, prolonged consumption and high doses of alcohol are known to induce psychopathology (Logue *et al.*, 1978; Kushner *et al.*, 1990; Davidson and Ritson, 1993). This is in agreement with the (moderate) correlation of drinking days × trait anxiety at t5 found in our study. In sum, alcohol consumption (relapse) and anxiety might represent a vicious circle in these patients, but further studies are needed to gain detailed knowledge.

Do our results indicate modified treatment needs by alcoholics after detoxification and, if so, in which subgroups? First, although severe and acute psychopathology may demand a time-limited intervention in some cases, current anxiety and/or depression in the early post-detoxification period (in both the presence and absence of lifetime or even 1-year comorbid anxiety or depressive disorders) generally seem to have a good prognosis and — by themselves — do not constitute the need for (long-term) psychopharmacological or psychotherapeutic treatment. This conclusion is in agreement with previous psychopharmacological studies, in which neither antidepressants nor antianxiety drugs consistently reduced depressive and/or anxiety symptoms more effectively than placebo in the first weeks of abstinence (e.g. George *et al.*, 1990; Kranzler *et al.*, 1996; for overview see Lejoyeux, 1996

and Litten *et al.*, 1996). Secondly, our results show that pathological trait anxiety 3–4 weeks after cessation of drinking — even more when combined with previous (or current) depressive and/or anxiety disorders — represents a high-risk constellation for relapses. Thus, adequate treatment may prevent relapses in these cases. Pharmacological investigations in this field did not reveal consistent results, but conclusions can hardly be drawn, because, unfortunately, comorbid diagnoses were not considered in these studies (Tollefson, 1991; Gorelick and Paredes, 1992; Malcolm *et al.*, 1992; Janiri *et al.*, 1996; Kranzler *et al.*, 1996; for overview see Lejoyeux, 1996 and Litten *et al.*, 1996). Thirdly, one recent retrospective and prospective study by our group revealed a further argument to offer treatment to comorbid alcoholics after detoxification: additional anxiety and/or depressive disorders (but not alcoholism itself) have been identified as major risk factors for suicidal ideas and behaviours (Driessen *et al.*, 1998), and psychotherapeutic and/or psychopharmacological treatment can be expected to substantially decrease this risk in comorbid alcoholics.

Further research efforts should focus on short (i.e. weekly) observation intervals between the second and fourth (or sixth) months after detoxification in alcoholics who are not treated for psychopathological reasons. Psychotherapeutic interventions should be compared with pharmacological interventions and the combination of both in homogeneous groups of alcoholics with current anxiety and depression and/or anxiety and depressive disorders, respectively.

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