



Specificity of autobiographical memories and basal cortisol levels in patients with major depression

Thorsten Barnhofer^{a,*}, Eva-Maria Kuehn^b, Renate de Jong-Meyer^b

^aDepartment of Psychiatry, University of Oxford, Warneford Hospital, Oxford OX3 7JX, England, UK

^bDepartment of Psychology, University of Muenster, Fliednerstr. 21, 48149 Muenster, Germany

Received 30 July 2004; received in revised form 14 October 2004; accepted 19 November 2004

KEYWORDS

Autobiographical memory;
Declarative memory;
Over-general retrieval;
Cortisol;
Depression

Summary This study investigated whether over-general retrieval of autobiographical memories in depression is related to increased basal cortisol levels. Forty-seven individuals with a current diagnosis of major depression were given the autobiographical memory test, in which they were asked to produce specific autobiographical memories following positive, negative and neutral cue words. Salivary cortisol samples were taken at fixed time intervals during testing in the afternoon. Basal cortisol levels did not appear to be markedly elevated and were not significantly correlated with autobiographical memory performance. There were, however, strong negative correlations between memory specificity and decreases of cortisol levels over time of testing. Findings suggest that while specificity of autobiographical memory may be sensitive to cortisol changes, the occurrence of over-general memory in depression is not necessarily due to increased cortisol levels.

© 2004 Elsevier Ltd. All rights reserved.

1. Introduction

Over-general retrieval of autobiographical memories has been shown to be one of the most reliable cognitive characteristics of depression. A large number of studies have found that, when asked to retrieve a specific memory following a positive, negative or neutral cue word, depressed patients perform significantly worse than normal controls (for overviews, see Williams (1996) and Healy and

Williams (1999)). Instead of retrieving events referring to a particular place and time, patients often come up with memories which are over-general by virtue of referring to a whole class of events, so-called categoric memories (e.g. "When I go to good parties").

Although initial studies with suicidal and depressed patients had found this deficit to be more pronounced for positive memories (Williams and Broadbent, 1986), evidence from later studies made it clear that over-generality occurs regardless of cue or memory valence (for example, Goddard et al. (1996)), thus, suggesting it to be a general rather than a mood-congruent deficit in memory retrieval. Cognitive accounts have described this

* Corresponding author. Tel.: +44 1865 223920; fax: +44 1865 223948.

E-mail address: thorsten.barnhofer@psychiatry.oxford.ac.uk (T. Barnhofer).

deficit in terms of difficulties in hierarchical memory search (Williams and Dritschel, 1992): instead of fluently moving through hierarchies of memory representations by using categoric representations as retrieval cues to access more episodic details, depressed patients seem to stop short at a categoric level of descriptions.

Williams (1996) has suggested that an over-general memory style may initially develop as an attempt to control negative affect associated with specific memories of aversive events. Consistent with this assumption, studies have shown correlations between over-generality and reports of childhood trauma (Hermans et al., 2004) as well as increased over-generality in PTSD (McNally et al., 1994, 1995).

Once established, over-general retrieval tends to become a habitual cognitive style (Brittlebank et al., 1993), which, especially in patients with higher numbers of depressive episodes in their histories, seems to remain relatively stable even when individuals recover from acute symptoms (Nandrino et al., 2002). The extent of this memory deficit has been shown to be a significant predictor of treatment outcome and clinical course of depression (Brittlebank et al., 1993; Peeters et al., 2003).

Although neurobiological research in depression has provided a large amount of evidence for structural and functional deficits affecting brain regions crucially involved in episodic memory, research-investigating involvement of such factors in autobiographical memory deficits is currently scarce. Recently, however, a study by Buss et al. (2004) has related specificity of autobiographical memory to levels of cortisol. In their study, Buss et al. (2004) tested autobiographical memory in young healthy male volunteers either following administration of 10 mg of hydrocortisone or following placebo and found that participants receiving hydrocortisone showed significantly lower specificity than those in the placebo group. This was the first study to relate neurobiological factors to over-general memory. The present study sought to extend these findings to clinically depressed patients.

Cortisol is known to act on brain sites including the hippocampus, prefrontal cortex and the amygdala, all of which are critically implicated in memory processes (see, for example, Lupien and Lepage (2001) and McGaugh and Roozendaal (2002)), and numerous studies have demonstrated decreases in declarative memory performance following stress-related physiological increases of cortisol or administration of hydrocortisone (Newcomer et al., 1994, 1999; Kirschbaum et al., 1996). Findings by

de Quervain et al. (2000) suggest that this effect is not necessarily due to influences on encoding of material but can also be observed when cortisol levels are increased only during retrieval. Possible mechanisms include inhibition of glucose transport into neurons and negative influences on neuronal excitability and synaptic plasticity (Pavlidis et al., 1996; Joels, 2001).

Negative cortisol effects on memory have been taken to suggest that cortisol may play a central role in cognitive deficits in depression (Stokes, 1995). Research has repeatedly demonstrated dysregulations of the hypothalamic-pituitary-adrenal axis in depression and evidence from challenge tests and measurements of basal levels has led to the notion that depression is often associated with chronically increased levels of cortisol (Carroll, 1982; Rubin et al., 1987). Consistent with the above assumption, several studies of depressive deficits in declarative memory have reported correlations with cortisol (Newcomer et al., 1994; Belanoff et al., 2001). A recent study by Bremner et al. (2004) showed that 2 day dexamethasone treatment (which decreases plasma cortisol levels) leads to a significant increase in declarative memory performance. However, whether increases in cortisol levels may also explain deficits in autobiographical memory, and, more specifically, over-general retrieval of autobiographical memories as a central phenomenon in cognitive theories in depression, is currently unclear. In interpreting the findings of their study, Buss et al. (2004) suggested that over-general memory in depression may, at least partly, be due to increased basal cortisol levels in patients. The purpose of the current study was to test this hypothesis in a sample of clinically depressed subjects. Cortisol levels were measured at the time of memory testing using 5 salivary samples taken at 10 min intervals beginning at 1600 h in the afternoon. We hypothesized number of specific memories retrieved to be negatively and number of categoric memories to be positively related to basal cortisol levels. Taking repeated cortisol samples also allowed us to study changes in cortisol over time of testing. However, no hypotheses were specified for relations between change in cortisol levels and memory performance.

2. Method

2.1. Participants

Participants were $N=47$ (29 female, 18 male; average age: $M=29.9$, $SD=8.4$) subjects with

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات