GHB withdrawal delirium treated with high dosages of diazepam and baclofen in a psychiatric hospital, a case report

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Introduction

Since 2009, the Kliniek Rotterdam Alexander (KRA) of Antes GGZ, part of the Parnassia Group, has used a diazepam-baclofen (DiBa) regimen for the detoxification of patients with high GHB dependence. According to yet to be published data only 2,8% (6/218) of patients undergoing GHB detoxification using DiBa developed delirium.

Here we present a case of a patiënt developing a delirium during a GHB and polydrug-detox with DiBa who could be stabilised using high amounts of diazepam and baclofen.

Our patient

- 30 year old Caucasian male
- +5 year history of GHB abuse
- GHB detoxification 4 times before using pharmaceutical GHB (pGHB) or DiBa
- History of GHB withdrawal delirium

Drug-use:
- 6-7mL GHB every two hours (47-55 grams GHB/day), but it had been irregular and more the week before admission
- 10mg of diazepam 3 times daily
- quetiapine 50mg daily
- +-1 gram of cocaine daily
- Tobacco

Upon admission clinical presentation was corresponding to GHB withdrawal, cocaine intoxication and exhaustion. See Table 1 for the corresponding vital signs at 12.00am.

Methods

According to the DiBa protocol:
- Patient was admitted to closed high care psychiatric ward.
- Titration phase started with 30mg diazepam every 2 hours and 20mg baclofen every 6 hours.
- Before every medication administration the patient was checked by a trained nurse for withdrawal symptoms, vital signs, level of consciousness and craving.
- Patient was assessed by the doctor twice daily.

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Results

Development of vital signs, medication administration and mental status are shown in **Table 1**.
10 hours into the titration phase our patient became disoriented and his pulse had increased tot 125. In response [1]diazepam was increased to 40 mg every 2 hours when the patient's pulse was >110bpm; otherwise, he continued to receive 30 mg.

The next day the patient started to experience craving for GHB, vivid visual hallucinations and restlessness. He showed disorientation in time, slurred speech and tremor of the hands. Elaborate blood and urinetests and physical examination were performed. Working diagnosis was GHB withdrawal delirium.

Table 1 Timeline of vital signs, of symptoms of withdrawal and administered diazepam and baclofen during admission

							Medication administered	
Day	Time	Mental status	Blood pressure (mmHg)	Heartrate (bpm)	Craving	DOS[A]	Diazepam (mg)	Baclofen (mg)
1	12:00am	Alert	161/106	99			30	20
	2:00pm	Alert	126/78	81			30	
	4:00pm	Alert	142/85	88			30	
	6:00pm	Drowsy	143/100	94			30	20
	8:00pm	Drowsy	124/74	105			30	
	10:00pm	**Delirium**	**131/85**	**125**			**40[1]**	
	12:00pm	Delirium	130/85	111			40	20
2	2:00am	Delirium	123/84	98			30	
	4:00am	Delirium	127/83	94			30	
	6:00am	Delirium	115/81	87			30	20
	8:00am	Delirium	123/80	81	-	7	30	
	10:00am	Delirium	106/61	75			30	
	12:00am	Delirium	120/77	87			30	20
	2:00pm	Delirium	117/78	90	++		30	
	4:00pm	**Delirium**	**110/70**	**87**		**6**	**40[2]**	**20[3]**
	6:00pm	Delirium	108/75	91			40	
	8:00pm	Delirium	106/69	89	+		40	20
	10:00pm	Delirium	107/67	83	+	8	40	
	12:00pm	Delirium	108/68	84			40	20
3	**2:00am**	**Drowsy**	**109/53**	**67**			**30**	
	4:00am	Drowsy	106/64	70			30	
	6:00am	Drowsy	92/48	70			30	20
	8:00am	Drowsy	84/50	76		3	30	
	10:00am	**Alert**	**108/66**	**72**			**30**	**20**

At [2]4:00pm of the second day (see Table 1) diazepam was increased to 40mg every 2 hours when patient's pulse was >80bpm and baclofen was increased to 20mg 5 times daily fixed dose. In total the patient received **410mg diazepam** and **100mg baclofen** on the second day. Day 3, at 10:00am, the patient's blood pressure had decreased to 108/66mmHg, pulse 72bmp, and he had become oriented and had stopped hallucinating. We concluded that the diazepam and baclofen titration phase was completed and that the delirium had resolved. Throughout the titration phase the patient was only mildly sedated, able to have conversations, having meals and sleeping briefly in between check-ups. On the third day patient received 350mg diazepam. From the fourth day onward, the diazepam dose was reduced by 10% per day. Baclofen was reduced from 100 to 80mg daily and continued as part of a relapse prevention treatment.

Discussion

- A GHB and polydrug withdrawal delirium was treated effectively within 26 hours in a high care psychiatric ward using a 2-hourly symptom based titration scheme with increasing dosages of diazepam (410mg/day) and baclofen (100mg/day).
- In this highly dependent patient high dosages of diazepam and baclofen were tolerated well as the medication was administered based on the withdrawal symptoms.
- The irregular pattern of GHB use prior to admission, combined with polydrug use, made us underestimate the DiBa dosage required at the start of detoxification, which may have led to the development of withdrawal delirium.
- Stabilizing GHB use prior to admission could potentially have prevented the extreme tolerance to DiBa.
- In similar future cases, DiBa could be administered more frequently (diazepam 1,5 hourly and baclofen 4 hourly) or at higher dosages from the start of titration phase. Also a combination of diazepam + pGHB could be considered when there is polydrug use and a history of GHB withdrawal delirium.