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INTRODUCTION

Nowadays increasing number of service dogs trained for various purposes help disabled people's lives. These dogs can function as guide dogs for the blind, seizure alert and hearing dogs and assistance dogs for the disabled. Training guide dogs for the blind has about a hundred years of history. The training goes according to the same standards everywhere in the world. One year old dogs, if they meet the predetermined criteria, are trained for six months by non-blind trainers to avoid or signal obstacles. At the end of the training phase a three week long intensive training with the blind recipient takes place, after which the schools maintain supervising of the recipient and the dog. Most organizations use questionnaires in order to evaluate the blind applicants' suitability for being a recipient. Danger of injury due to the unpredictability of epileptic seizures is an excluding factor in most cases. The possibility of using dogs for signaling epileptic seizures was realized only a decade ago. The way of their training differs greatly from the training of other assistant dogs. Seizure signaling dogs are subjected to an extensive early socialisation with their owners to allow the development of social dependency and a perfect co-operation. They gradually become sensitive to small changes of human behaviour which implicate an oncoming seizure. The owners' seizures lead to uncontrollable anxiety in their dogs. This emotional state manifest in behavioural changes which can be developed into a specific signaling behaviour with training. To our knowledge, however, until now nobody has trained and used service dogs for recipients suffering from both visual impairment and epilepsy.

AIMS

Our purpose was to help a blind person suffering from epilepsy. For this purpose we wanted to train a guide dog which can alert the seizures in time as well and therefore can decrease the chance of accidents. Our hypotheses: Our first hypothesis was that dogs who have not been raised by the owner since early puppyhood are also capable of sensing symptoms of an oncoming epileptic seizure. Recent experiments on dog-human attachment (Topál et al. 1998, Gácsi et al. 2001) suggest intimate emotional bond can develop between even an adult dog and its owner as well. Our second hypothesis based on the fact that guide dogs and their owners collaborate as a team, using a very specific way of communication system during their daily routine. The dog often takes over initiation if it feels that its owner can't decide (Naderi et al. 2001). Our presumption was that if the guide dog recognized the symptoms of the oncoming seizure, its behaviour for protecting its owner spontaneously activated. This 'seizure alerting' behaviour reaction is easily distinguishable and the dog can be easily trained to use it as a warning adequately. This way the dog can also be function as a seizure alert dog, protecting both its owner and itself from any harmful event.

PATIENT AND METHODS



V. Zs. and her dog (Photos are published by the written informed consent of the patient)

In our case a twenty-year old, dog-loving, female, who has been blind for half a year and has been suffering from severe epilepsy for nine years, received a guide-dog. The patient due to her injuries is often depressive, which is kept in balance by drug treatment. Her state of depression was constantly evaluated. She is prominently intelligent and synergistic. Family background and supervision is assured. From the patient's hospital course we knew that during the winter and summer she doesn't usually have seizures, seizures often occur in spring and autumn. In line with this, we decided to give her the dog in the winter. During the handing over of the dog they not only learned to navigate together but they also did exercises to develop their relationship. We didn't teach the patient how to command the dog unlike other cases, we supported the development of communication based on individual signals instead. With this method we wanted to accelerate the development of dog-owner attachment. To prepare the helping behaviour during seizures the patient played with her dog on the floor at times and then -exceptionally- allowed the dog do lick her face and play with her upper arm carefully. Stimulating these areas during a seizure was advised by physicians to the family earlier. In the meantime the patient and her dog lived together in their home, only the patient communicated with the dog, our trainers only provided professional instructions.

RESULTS (ETHOLOGICAL)

The patient had 24 seizures in spring (Table 1.). The dog's seizure alert behaviour developed extremely quickly exceeding our expectations. Before the second seizure the dog already showed those behavioural elements that later became typical in these situations although the owner didn't interpret these in time yet. From the third seizure the signals started 3-5 minutes before the seizure and these were striking enough to be recognized by the owner. In some unexpected cases (e.g. while using the bathroom) the owner couldn't clearly interpret the signals. In these cases the dog was very confident, denied obedience and shepherded the owner to a safe location. During the seizures the dog did the anticipated help. It barked and licked the owner's face and upper arm. It didn't interfere with the help of the relatives and with their permission continued the activity until the seizure ceased.

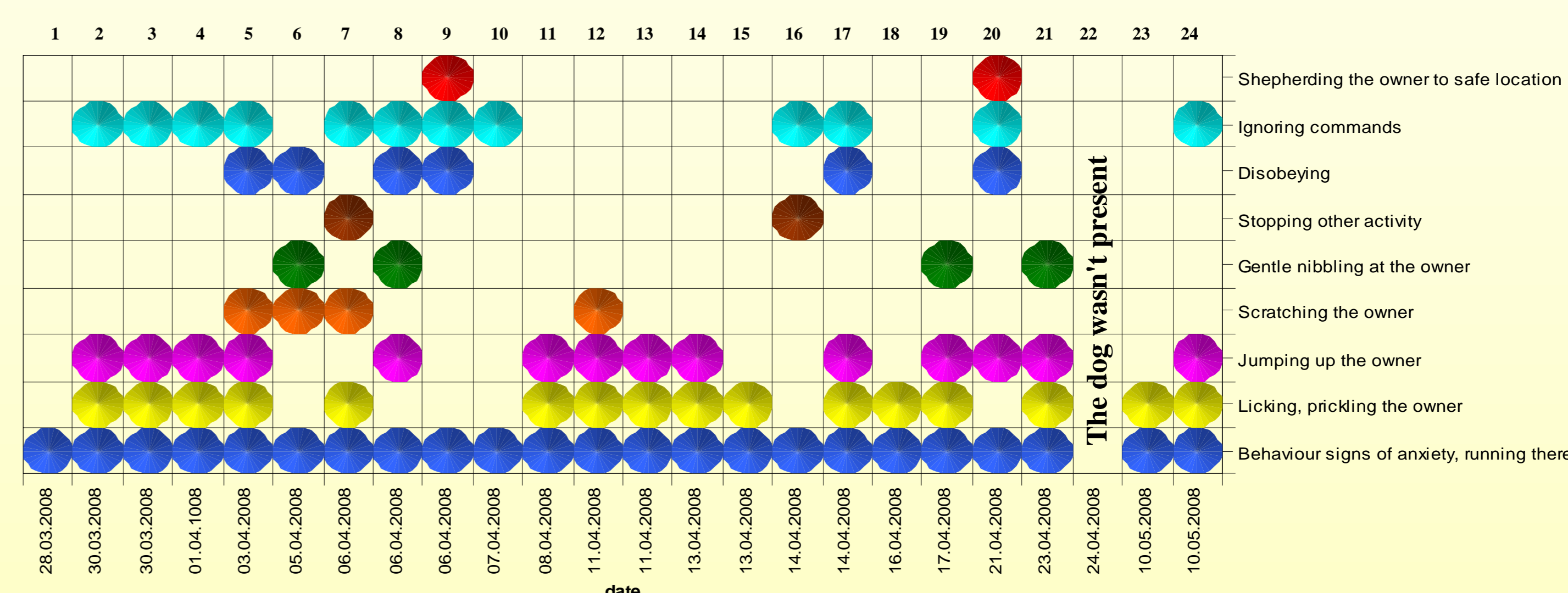


Table 1. The elements of the dog's typical seizure alert behavior in the investigated time

RESULTS (HUMAN THERAPY)

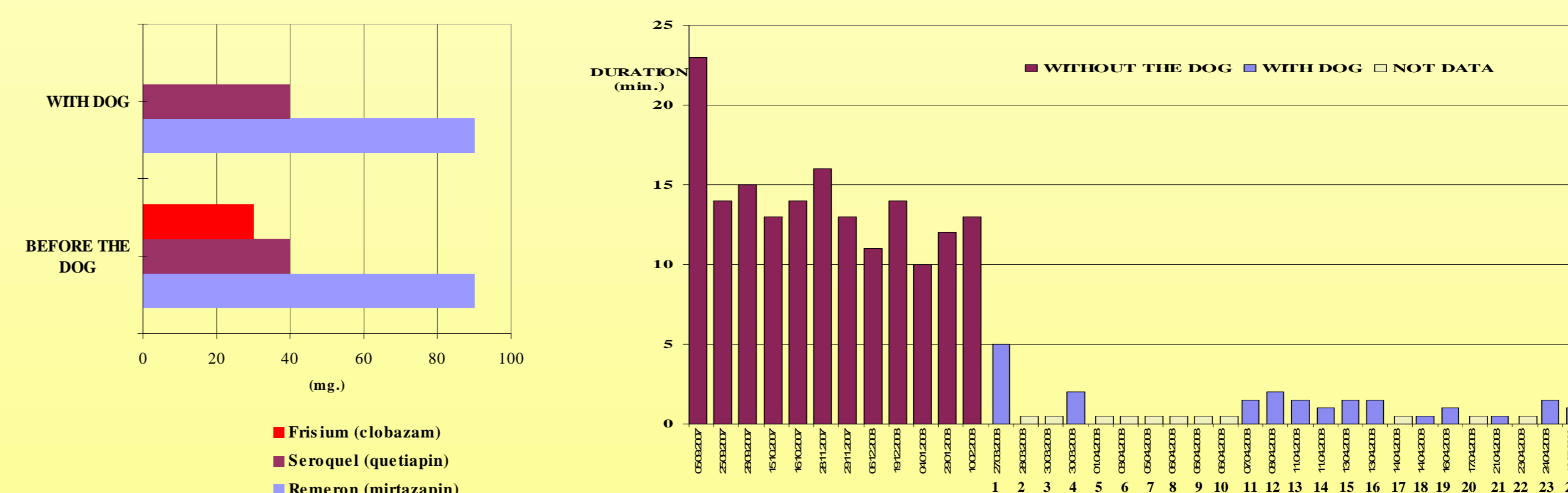


Figure 1. The daily dose of antidepressant drugs

Figure 2. The duration of seizures based on the medical records, notes of family members and videos

Due to the presence of the dog the patient in the experiment got a better quality of life. She regained her independence due to the guiding ability and regained her sense of safety due to the dog's alerting ability. Earlier she often suffered head and limb injuries because of seizures. Since she got the dog she has been injured only once when the dog wasn't present. Her mood got better, her need of medication decreased. The duration of the seizures decreased to two minutes since the dog's presence.

CONCLUSIONS

The work of the guide-dog and the seizure-predicting dog can be conciliated. As long as the individual treatment and the surveillance is guaranteed, it is worth conducting experimental observations with aim of improving our training methods of a double-function dog (guiding and seizure alerting).

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