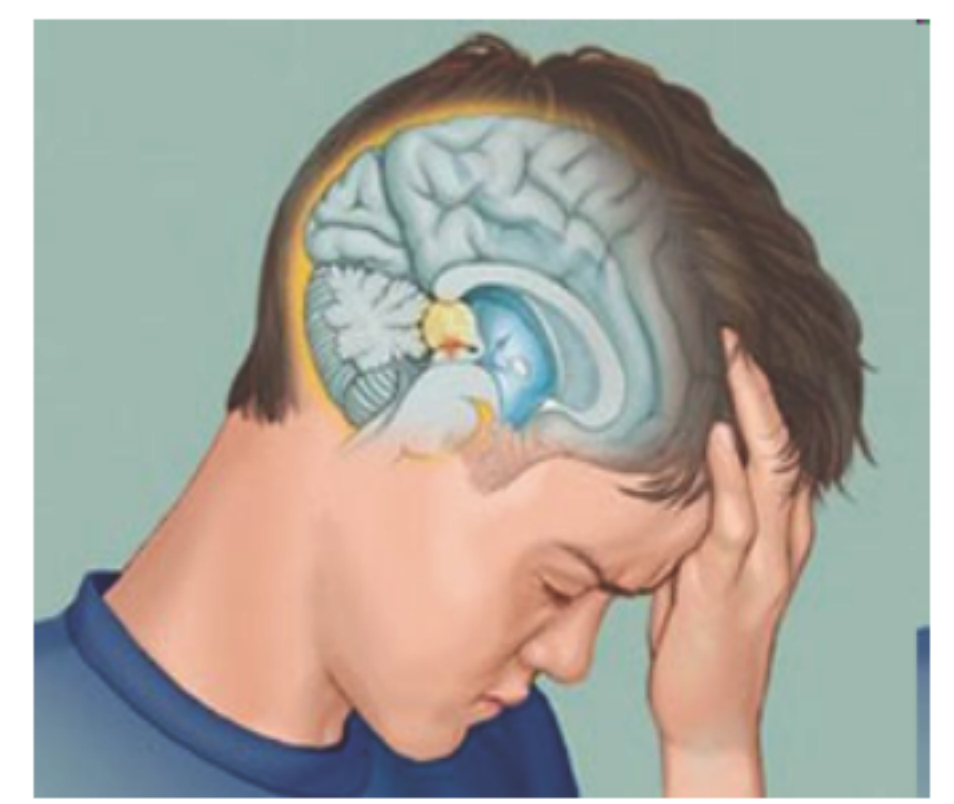




DIFFERENCES IN GROWTH DIRECTION OF NON-FUNCTIONING, PROLACTIN-SECRETING AND GH-SECRETING MACROADENOMAS

I.Ilovayskaya, A. Dreval, Y. Krivosheeva, G. Stashuk, Y. Bardeeva
 Moscow Regional Research and Clinical Institute ("MONIKI")



INTRODUCTION

Pituitary adenomas are the most common lesion found in sella turcica region [1]. Magnetic resonance imaging (MRI) is an useful and available tool for diagnosis of pituitary tumors. According to recent data different types of pituitary adenomas could have specific features on MRI [2, 3].

AIM of STUDY

To analyze differences in growth directions of pituitary macroadenomas with various hormonal secretion.

MATERIAL AND METHODS

Clinical and MRI data of 178 patients with pituitary macroadenomas were included in the study. Patients were divided into 3 groups in accordance with their hormonal secretion (Tab.1). Patients with prolactinomas were younger than with NFAs and somatotropinomas ($p=0.02$).

RESULTS

Pituitary sizes and tumor volume were higher in NFAs compared to other types of tumors ($p<0.001$) (Tab. 1).

Suprasellar tumor growth was predominant in NFAs and prolactinomas but not in somatotropinomas where infrasellar extension was the most frequent one (Fig.1). Higher frequency of infrasellar growth of somatotropinomas was noted but the difference was not significant in comparison with other tumors ($p>0.05$). Obvious prevalent incidence of laterosellar growth of prolactinomas was observed compared with both NFAs ($p=0.002$) and somatotropinomas ($p=0.016$) (Fig.2).

According to our data pituitary macroadenomas with isolated infrasellar extension are usually hormonally active.

Optic chiasm compression according to MRI data was found in 55% of NFAs, 35% of prolactinomas and 19% of somatotropinomas ($p<0.001$) and it was correlated with suprasellar growth and vertical size >18 mm.

Conclusion

In our cohort of patients non-functioning pituitary adenomas have markedly larger volume with predominant suprasellar growth and high frequency of chiasm compression compared with hormonally active pituitary tumors. Prolactinomas and somatotropinomas did not differ in volume, however, had some differences in growth directions: this is the first data concerning high prevalence of laterosellar extension of prolactinomas, predominant infrasellar growth of somatotropinomas was also observed without significant difference in comparison with other pituitary tumors.

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Tab. 1. Patients' age and tumor characteristics

| Parameters Me[25%75%] | Groups | Non-functioning adenomas n=87 | Prolactinomas n=48 | Somatotropinomas n=43 |
|---------------------------------------|--------|-------------------------------|--------------------|-----------------------|
| The age patients (years) | | 59 [52;66] | 47 [34;47] | 55 [43;64] |
| Vertical size of pituitary tumor (mm) | | 24 [17.5;34.5] | 21 [15;31] | 18 [14;25] |
| Sagittal size of pituitary tumor (mm) | | 23 [17.4;28] | 20 [16;30] | 18.2 [14;24] |
| Frontal size of pituitary tumor (mm) | | 23 [18;30] | 20 [14;30] | 17 [14.5;23] |
| The tumor volume (mm ³) | | 6620 [2638;14492] | 5365 [1495;10316] | 3052 [1696;5727] |

Fig. 1. Growth directions in pituitary macroadenomas

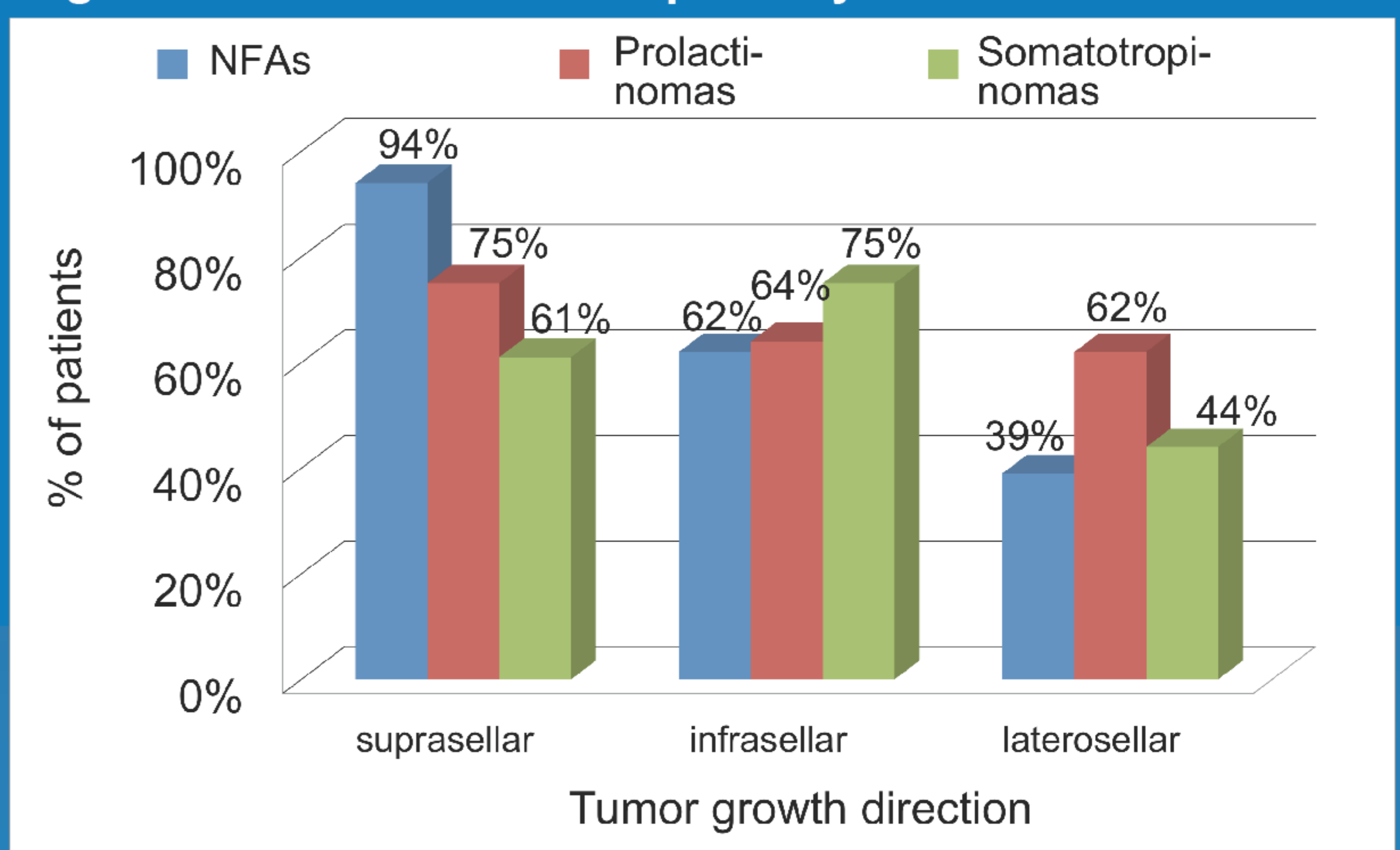
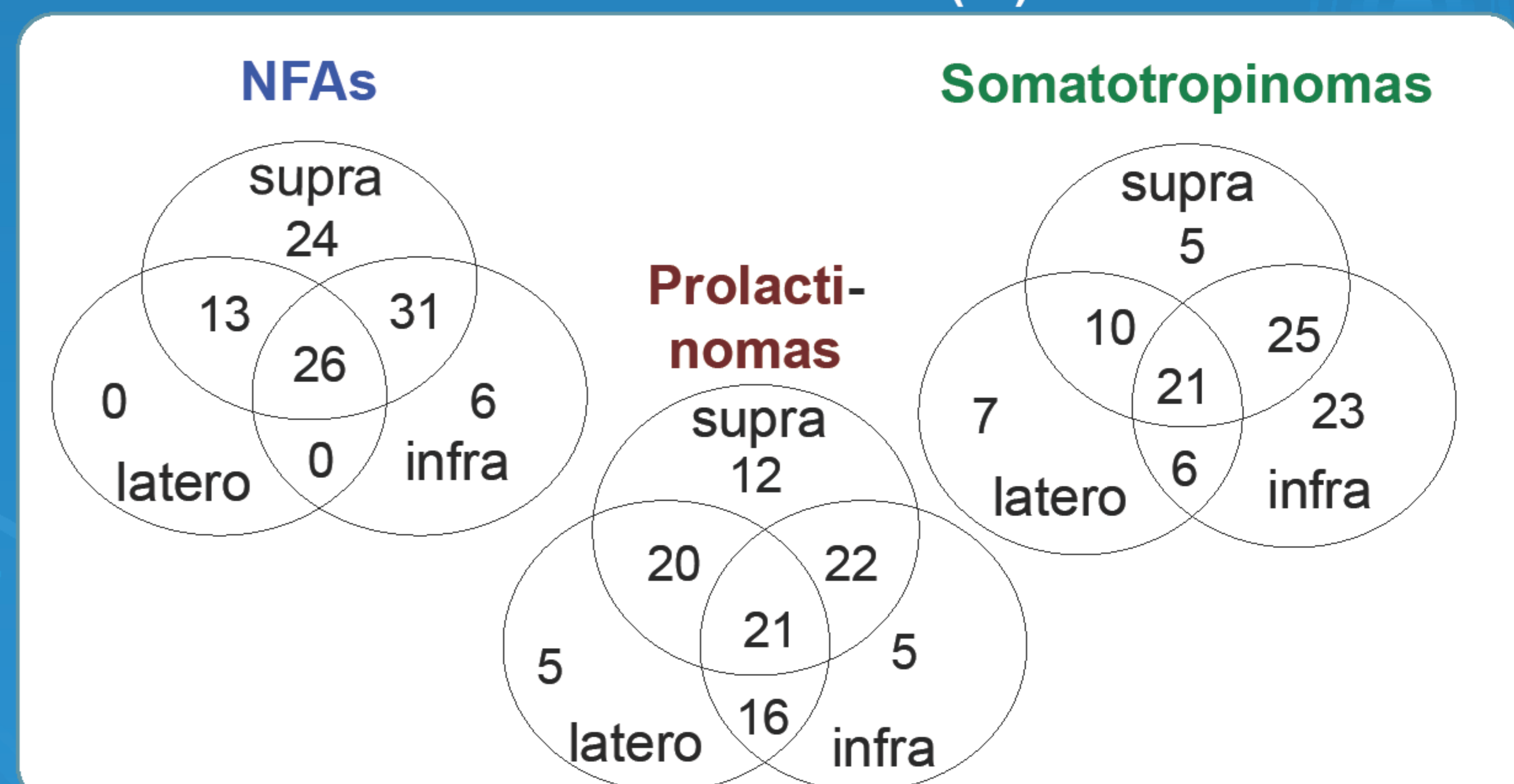


Fig.2. Combinations of growth extension in pituitary macroadenomas (%)



CONTACT INFORMATION

Irena Ilovayskaya irena.ilov@yandex.ru
 Yulya Krivosheeva yulya.k.89@inbox.ru
 Alexander Dreval dreval@diabet.ru