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Experience of endovascular procedures on abdominal and thoracic aorta in CA region

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Region Characteristics

Territory and region data

Country	Area km²	Population (2012)	Population density per km²	Nominal GDP millions of USD (2012)	TEVAR & EVAR, per year	Capital
Kazakhstan	2,724,900	17,948,816[28]	6.3	196,419	**71 (2014 y.)**	Astana
Kyrgyzstan	199,900	5,604,212[29]	27.8	6,473	**Only OR**	Bishkek
Tajikistan	143,100	8,052,512[30]	55.9	7,592	**Only OR**	Dushanbe
Turkmenistan	488,100	5,171,943[31]	10.5	33,679	**No data**	Ashgabat
Uzbekistan	447,400	30,185,000[32]	67.5	51,168	**Only OR**	Tashkent

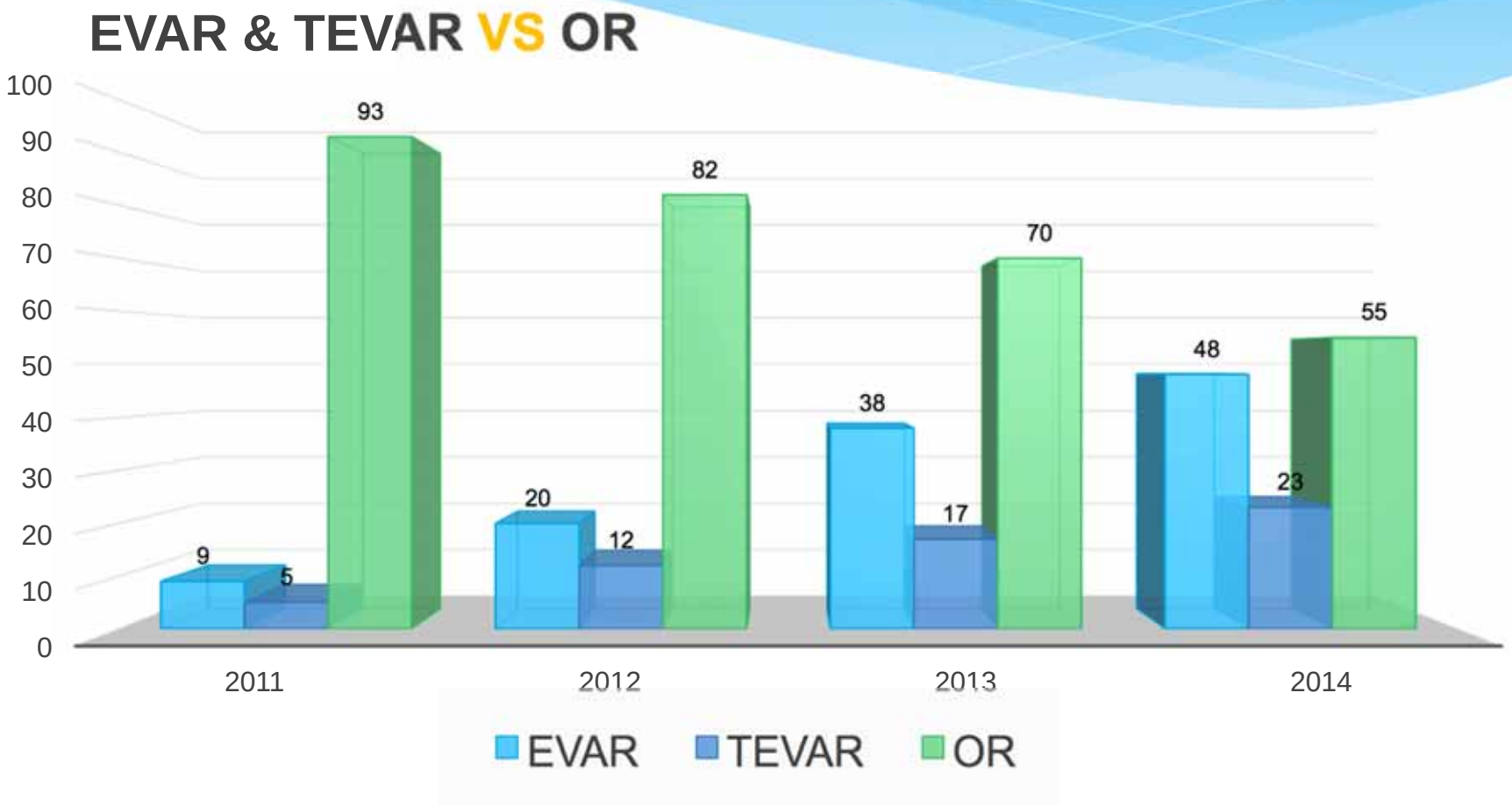
Total: 66,962,000

Actuality of the problems of aorta aneurysms in Kazakhstan: epidemiology

- Aneurysm of abdominal aorta is 82% of all diagnosed **aneurysms**
- Incidence of disease is 2-5% among men over 60 years old
- Peak incidence for men is over 70 years old, and over 80 years old for women
- The ratio of men and women with abdominal aortic aneurysm is 3:1
- Two hundred cases of **aortic aneurysms** are diagnosed in Kazakhstan annually
- In Kazakhstan, up to 170 people a year die from rupture and postoperative complications of AAA, whereas from 30 to 50% of patients die from rupture of AAA before medical care is delivered
- **Abdominal aortic aneurysm** is at 15th place among all cases of death and 10th place as case of death among men over 60 years old

**Data for 2014 year*

Intervention Structure



*Data for 2011 – 2014 years

Intervention Structure

Since 2011 year 172 EVAR & TEVAR were implemented in Kazakhstan

EVAR **TEVAR**

**Data for 2011 – 2014 years*

Patient Characteristics

Item	EVAR	TEVAR
Number of patients	115	57
Average age of patients	66,5+3,5	59,5+8,3
Men/Women	87/28 (3:1)	43/14 (3:1)

Associated Diseases

No.	Description	Quantity	
		Abs.	%
1.	Coronary artery disease, including:	148	95,7
	- myocardial infarction in anamnesis	54	36,4
	- 2 and more myocardial infarctions in anamnesis	22	13,6
2.	Arterial hypertension	132	93,9
3.	Cerebrovascular insufficiency, including:	32	30,4
	- acute ischemic stroke in anamnesis	14	28,5
4.	Chronic obstructive pulmonary disease	47	13,1
5.	Diabetes	53	31,9
6.	Oncological disease	12	2,9
7.	Obesity, III-IV degree	21	11,6
8.	Renal failure, hemodialysis	8	2,9
9.	The combination of 2 or more associated disease	74	46,4


HEART DISEASE
SMOKER
HIGH BLOOD PRESSURE
FAMILY HISTORY OF ABDOMINAL ANEURYSM

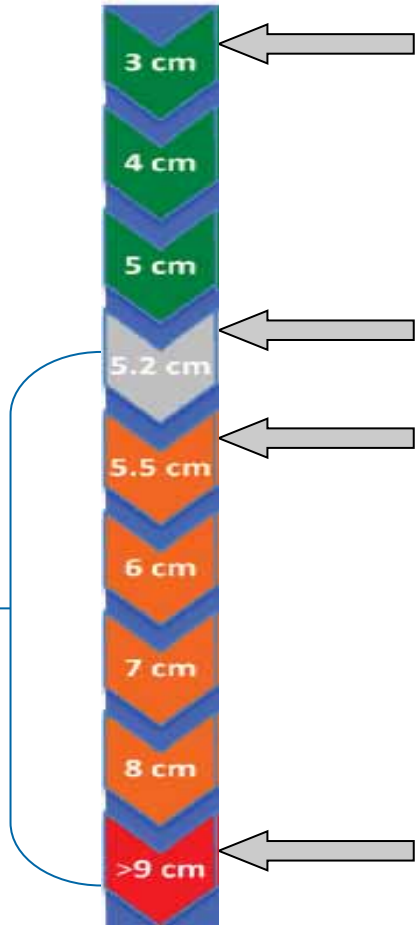
We use the recommendations on the planned repair of aortic aneurysms given by the European Society of Vascular Surgeons (ESVS)

Criteria for patient selection:

1. **Doubled diameter of the native aorta in the area of enlargement**
2. **Appearance of symptoms**
3. **Rapid growth of aneurysm**

(>1 cm for year)

EVAR or open reconstruction as planned



Dynamic monitoring and control

Intervention necessity under consideration – for women

Intervention necessity under consideration – for men

Hospitalization and emergency surgery

Moll, et al. Management of Abdominal Aortic Aneurysms Clinical Practice Guidelines of the European Society for Vascular Surgery. Eur J Vasc Endovasc Surg (2011) 41, S1-S58

Complications during EVAR & TEVAR procedures:

- Implantation of branch out of estimated landing zone due to either too long or too short side branch (sizing inaccuracy)
- Endoleak of type I
- Endoleak of type II b’
- Overlapping the renal artery due to deviation from technique recommended by manufacturer
- Stent graft migration (1 case in TEVAR, reason - a short neck)
- Direct technical success of implantation:

  EVAR – 96%

  TEVAR – 98%

Long-term results in the followed up group of patients (observation period: 6 -30 months, total 127 patients after EVAR, TEVAR)

№	Complications	EVAR	TEVAR
1.	*False aneurysm + bleeding from common femoral artery*	2	1
2.	*Thrombosis of stent graft branch*	8	0
3.	*Endo leak type II*	11	0
4.	*Dissection of the left common carotid artery*	-	1
5.	*Proximal leak*	1	2
6.	*Damage the structure of the graft*	0	1
	Total:	**22 (17,3%)**	**5 (3,9%)**

Long-term results in the followed up group of patients (observation period: 6 -30 months, total 127 patients undergone EVAR, TEVAR)

№	Causes of mortality	EVAR	TEVAR
1.	*Acute MI*	2	1
2.	*Stroke*	-	1
3.	*Cancerous intoxication*	1	-
4.	*Aneurysm rupture*	-	1
	Total:	6 (4,7%)	

Results

- **The patients were discharged with compensated blood circulation in the lower extremities. Positive clinical effect was confirmed instrumentally during dynamic examination of the patient under ambulant condition**

- **In all cases of type II b leaks after EVAR on control CT after 6 months the growth of the aneurysmal sac was not observed. Leading arterial branches were occluded**

Thus, endoprosthesis of abdominal and thoracic aorta is high-technique and modern method of treatment, which is accompanied by significant efficiency, lesser traumatic and can be used on the patients of higher risk

The patients undergone endoprosthesis showed better parameters of intraoperative and postoperative courses, which is basic principle of present-day medical care, i.e. "patient's safety"

Usage of modular endoprosthesis extends the opportunity to render surgical aid to patients with aortic aneurysm, accompanied with severe associated disease, and also to elderly and senile patients. Endoprosthesis implantation is the choice number one in treatment of such category of patients.

Yesterday…

Today…

So what has been achieved today?

- Cooperation of radiologists and vascular surgeons
- The background for widespreading the minimally invasive techniques in the treatment of aneurysmal aortic lesions
- Storage of implants just close to the clinic
- An information resource for the collection and exchange of information between specialists

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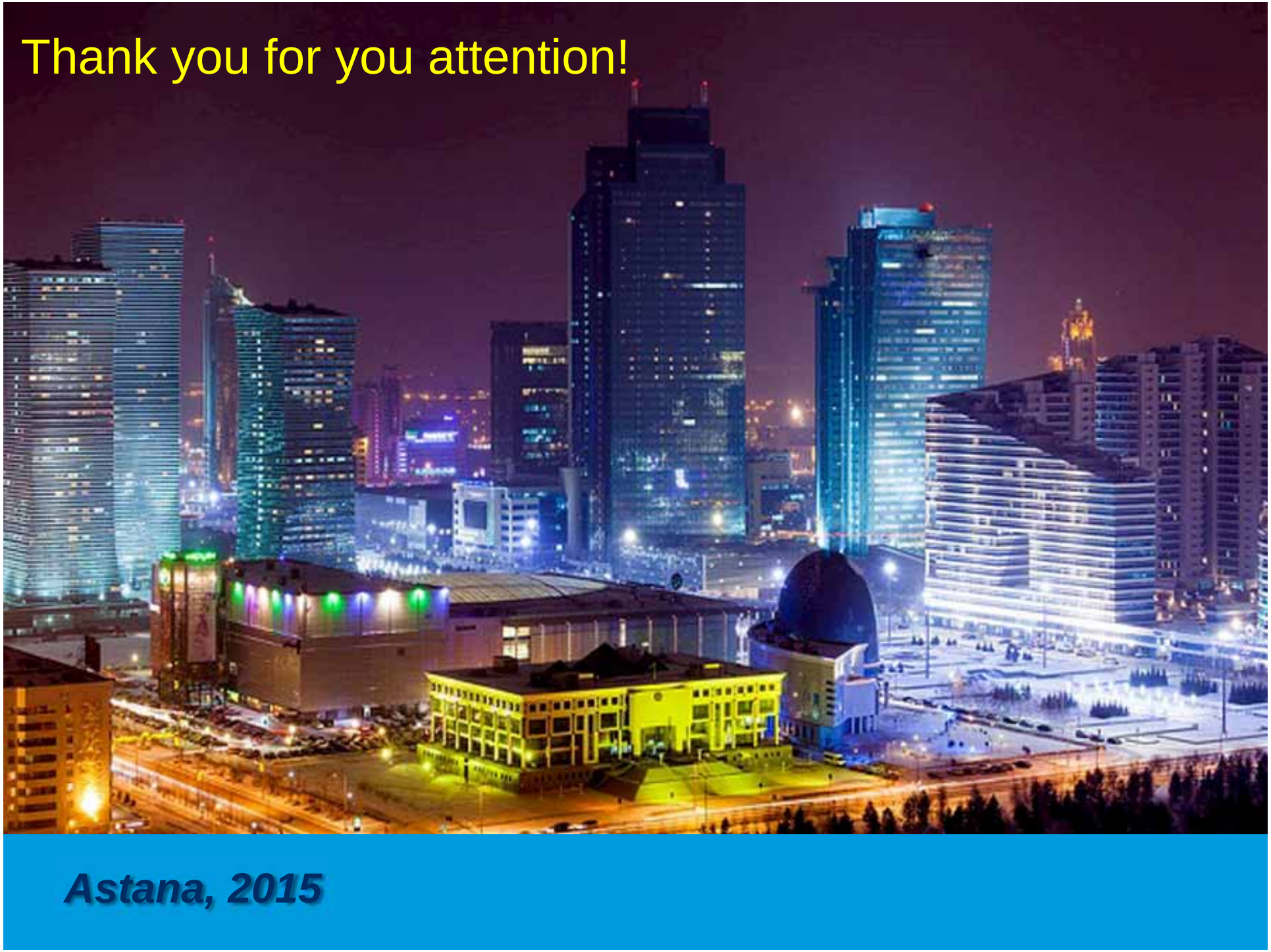
What we would like to do tomorrow…

- Helping the urgent patients with rupture of aortic aneurysm
- Introduction of screening programs to identify patients at the Republican level
- The development of national guidelines
- ……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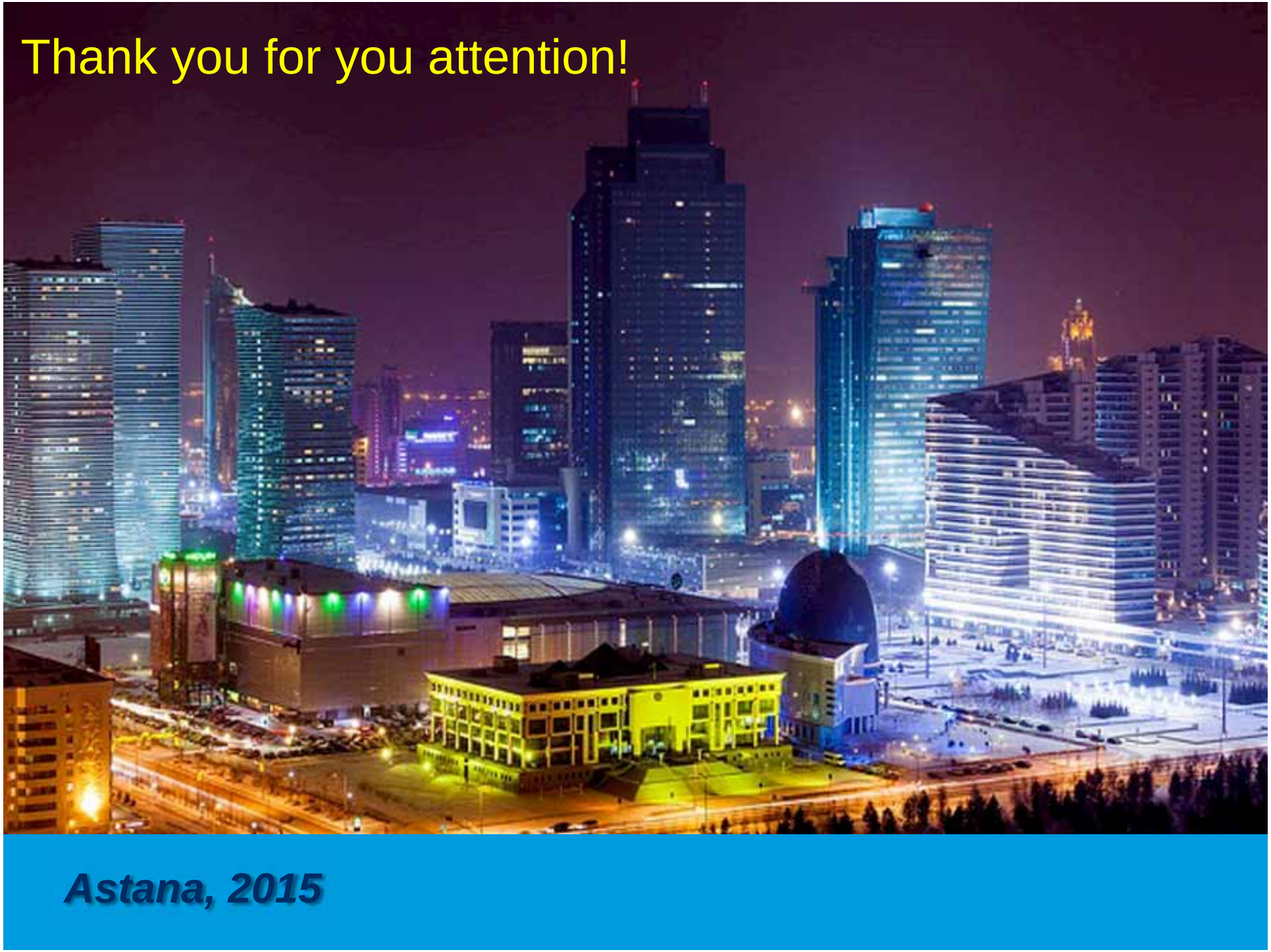
Astana, 2015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