Interregional clinic for early diagnostics and treatment of cancer

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Clinical equipment list:

DIAGNOSTICS:
- Radionuclide diagnostics complex (PET/CT)
- MRI
- Dual energy CT
- Ultrasonography

TREATMENT:
- CyberKnife
- TomoTherapy

CYCLOTRON AND RADIOCHEMICAL FACILITY:
- Cyclotron
- Radiopharmaceutical synthesis laboratory
- QC laboratory
Expert class ultrasonograph GE Logiq 7 is a digital multifunctional system. A new unique TruScan architecture is utilized in order to create a high quality imaging.
Application: abdomen, tocogynecology, cardiology, vessels, urinology, neonatology, superficial organs, transcranial examinations.
Biograph mCT 20

Molecular computed tomography

A combination of high definition PET and adaptive spiral computed tomography
Biograph mCT 20 allows to determine structural and functional changes of organs and tissues and therefore put a diagnosis at early stages. Such diagnostics saves funds on treatment significantly. Prospect of recovery rises up.
PET/CT of the whole body with FDG

**PET/CT with FDG** is a hybrid procedure of X-Ray diagnostics incorporating a PET and low-dose X-Ray spiral computed tomography which are performed in series at the same scanner.

**PET/CT with FDG** is a molecular imaging procedure performed after FDG intravenous injection marked by short half-life isotope of 18F. This radiopharmaceutical is identical with conventional glucose and therefore it allows to evaluate metabolism of both tissues and organs in a quantitative way. The short half-life isotope provides with a minimal radiation exposure on patient’s organism in comparison with low dose X-Ray examinations.
A combined positron emission tomography of the whole body with utilization of 18F FDG

- Staging of cancer
- Opportunity of imaging metabolic alterations
- Search for a primary site
- Detecting metastases in lymphaglands, bones and other organs
- Checking efficiency of surgical service, beam-therapy and chemotherapy
- Detecting palindromia
- Differential exclusion of benigns and malignant
CT of the whole body

PET of the whole body

Combined images
PET/CT of the whole body with 18F FDG

In most cases, PET/CT with 18F FDG utilization is performed from Or down to midthigh. Patients with lung cancer, cutaneous melanoma and when searching for the primary site of opaque localization are examined from calvarial bones down to toes. If it is necessary to exclude a nature of detected metabolic alterations then postponed scans of regions of interest are assigned. If it is necessary to specify a topography of metabolic alterations in anatomically sophisticated localizations and to confirm metabolic alterations via usage of X-Ray data then a target CT scanning is performed with intravenous contrast enhancement. A total radiation exposure on patient at PET/CT procedure of the whole body with 18F FDG does not exceed 10 mSv.
Indications for 18F FDG PET/CT of the whole body

PET/CT procedure for the whole body is practiced on a wide scale in the following cases:

- N&M staging procedures, treatment performance management, diagnostics of regress for carcinoma of lung (non-small-cell and small-cell) and mesothelioma

- Differential exclusion of solitary pulmonary nodule sized from 6 mm

- Tumors of vague localization (CUP-syndrome) along with detected distant metastasis

- Staging, restaging, treatment performance management, diagnostics of regress for lymphoms

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for breast carcinoma
Indications for 18F FDG PET/CT of the whole body

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for colorectal carcinoma

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for melanocarcinoma

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for gynaecological carcinoma (mainly ovarian carcinoma and cervix carcinoma)

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for head and neck tumors

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for oesophageal cancer

- N&M staging and restaging procedures, treatment performance management, diagnostics of regress for testicular cancer
Indications for 18F FDG PET/CT of the whole body

18F FDG PET/CT procedure may be applied when diagnostic results appear to be ambivalent in the following cases:

- Diagnostics of recurrent non-clear-cell kidney carcinoma
- Differentiation of lumps in pancreas
- Primary staging and diagnostics of recurrent stomach cancer
- Soft-tissue sarcomata
- Primary exostosis
- N&M staging procedures, diagnostics of recurrent thyroid carcinoma
- N&M staging procedures, diagnostics of recurrent hepatocellular carcinoma
Contra-indications for 18F FDG PET/CT of the whole body

Absolute contra-indications: pregnancy

Relative contra-indications: galactosis, pancreatic diabetes, generally poor condition of a patient

Restrictions: the 18F FDG PET/CT procedure should not be performed for patients whom blood sugar level exceeds over 8 mmol/l

18F FDG PET/CT procedure is performed no earlier than:
- 2-3 months after curative resections (except a necessity of M restaging)
- 2-3 weeks after local surgical service
- 7-10 days after centesis
- 3-4 weeks after chemotherapy
- 5-7 weeks after beam-therapy
Indications for 18F FDG PET/CT of the whole body

Restrictions:

CAUTION! If it is necessary to determine an efficiency of selected chemotherapy then an examination may be held in 5-7 days after last injection of chemotherapeutic agents. Such examinations are held only if the primary PET/CT procedure was held before treatment started.

CAUTION! If a schedule of PET/CT procedures is not followed then false results may come out with high probability.

Before the examination starts, it is necessary to make a preliminary preparation in 2-3 days before holding a PET/CT procedure itself.
Preparations before 18F FDG ПЭТ-KT procedure of the whole body

Avoid sports activity, heavy physical loads in 3 days before the procedure

The last meal should take place no later than in 6-8 hours before examination starts!!!

Patients with pancreatic diabetes of types 1&2 should inject insulin-containing pharmacy no later than in 4-5 hours before examination starts.

Avoid eating and drinking anything that generates intestinal gases: black bread, milk, cabbage, legumes, fruits, garlic

Have a light evening meal: glass of youghurt, nonfat cheese
Preparations before 18F FDG PET-CT procedure of the whole body

Intestinal radiographic opacification:

- Prepare the following solution on the night before examination: solute 20 ml of radio-opaque (60% of sodium amidotrizoate) in 2 litres of boiled water;

- Drink 1/3 of prepared solution during 20 minutes at night;

- Drink 1/3 solution of prepared solution during 20 minutes in the morning;

- Bring the rest of solution for examination

Preventative anti-allergic actions:

- Take an antihistamine (e.g. chloropyramine, promethazine, mebhydrolin) during two days before examination 1 pill per day
Capabilities of 18F FDG PET combined with CT

Patient with central carcinoma of left lung
PET and combined images demonstrate a region of tumor decay invisible at CT images
Capabilities of 18F FDG PET combined with CT

Patient with central carcinoma of left lung
CT images demonstrate lung hilum within normal. PET and combined images demonstrate metastasis in lymph nodes of both lungs.
Capabilities of 18F FDG PET combined with CT

Patient with carcinoma of sigmoid colon
CT images do not demonstrate an abnormality. Combined PET/CT images demonstrate multiple metastasis in hepar
Capabilities of 18F FDG PET combined with CT

Patient with hepatic cancer
CT images do not demonstrate an abnormality. Combined PET/CT images demonstrate metastasis in increased supraclavicular lymph node.
Magnetic Resonance Imaging System
Siemens Magnetom Symphony 1,5T
Siemens Magnetom Symphony 1,5T MRI new capabilities:

- Image quality enhancement by means of high resolution capability
- Visualization of the smallest anatomical organizations
- Differentiation of lesions by means of the newest software
- Gaining of magnetization factor leads to enhancement of post-contrast images quality and reduction of radio-opaque’s amount
High quality of image

Siemens Magnetom Symphony 1,5T MRI System

High degree of tissue differentiation
mts in L1 vertebra

Enhanced visualization of abdominal cavity organs and retroperitoneum
High quality of image

Siemens Magnetom Symphony 1,5T MRI System

High resolution in neuroimaging

Manifold possibilities of high strength field MRI

Differentiation of the smallest encephalon’s structures
High quality of image

Siemens Magnetom Symphony 1,5T MRI System

High quality of joint visualization
High strength MRI with use of dynamical bolus radiographic opacification

Automated dual vessel MR injector operating in real time mode tracks an accumulation of radiographic opaque. This results in greater information value of images.
High strength MRI with use of dynamical bolus radiographic opacification:

New opportunities of vessel structures’ visualization

Detection of mass lesion structure
Computed Tomograph
SOMATOM Definition DS 128
Computed Tomograph
SOMATOM Definition DS 128

- Contains two X-Ray emitters. The newest SOMATOM Definition scanner was based upon 64-slice SOMATOM Sensation 64 computed tomograph with use of Straton’s X-Ray tube and Z-sharp double data retrieval algorithm
- Scanner performs rapid data retrieval with use of two X-Ray sources and two detector arrays
- High rotation velocity – 0,33 s/round
- Increased gantry aperture and extended scanning range
- Visualizing greater body area at less time
- Reconstruction algorithms allow to scan in low dose mode while the highest quality of image remains the same
Capabilities of dual energy CT

Computed tomography of the whole body with intravenous bolus radiographic opacification for detection of the primary lung and metastasis
Capabilities of dual energy CT

More sensitive diagnostics of volume images due to reconstruction of aquatic, iodic and monochrome images
Capabilities of dual energy CT

Improvement of visualization by means of chromatic contouring
Capabilities of dual energy CT

Suppression of artefacts submitted by metal due to image post-processing in Dual Energy mode
Multispiral computed tomography using dynamical bolus radiographic opacification

New opportunities in diagnostics of vessel abnormality
CyberKnife®, the robotized stereotactic radiosurgery system

This is a robotized radiosurgery system consisting of a 6 MV linear accelerator attached to a manipulator with the robot arm and a unique patient table (RoboCouch) with six degrees of liberty. X-Ray tubes and floor-mounted detectors, a perfect breath control system (Synchrony) guarantee precise radiation exposure on site of damage during the whole procedure.
How CyberKnife® operates

CyberKnife is oriented to stereotactic radiosurgery. Its principle is based upon exposure by thin beams running under various angles and focused in a tumor. As this radiation is exposed, the abnormal cells die and surrounding sound tissue almost does not get exposed at all.
Medical linear accelerators based upon gantry

Various modifications are intended for specific utilization

Novalis® Linac Elekta Synergy®, Varian Trilogy®

Legacy systems

**Gamma Knife®**

It treats by means of 201 simultaneously radiating cobalt sources
Advantages of CyberKnife versus GammaKnife

• GammaKnife was designed only for radiosurgery service of brain tumors while CyberKnife is more versatile and can be used for treatment of various localization of tumors such as lung, hepar, prostate and others. The “tumor tracking while treating and breath synchrony” sub-system guarantee precise dose delivery in a specified area.

• There is no hard and painful frame detention and no risk of infection. Opportunities of paediatric and gerontological practices are also extended.

• CyberKnife allows to treat patients with larger tumors due to big number of fractions.
**Linear accelerators based upon gantry**

- Dose delivery location error is over 10 mm
- 20 up to 35 treatment sessions are required with duration up to 1.5-2 months
- Patient positioning precision is checked by external reference points which are established by means of a simulator

**CyberKnife® treatment**

- Dose delivery location error is less 1.5 mm
- 1 up to 5 fractions are required in average
- Tumor movement is checked by imaging in real time mode
<table>
<thead>
<tr>
<th></th>
<th>CyberKnife stereotactical radiosurgery</th>
<th>Conventional surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discission</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>In-patient clinic</td>
<td>Нет</td>
<td>Yes</td>
</tr>
<tr>
<td>Recovery after treatment</td>
<td>No</td>
<td>Depends on treatment type (may take several months)</td>
</tr>
<tr>
<td>Algesis</td>
<td>No</td>
<td>Yes (with pharmacy)</td>
</tr>
<tr>
<td>Risk of infection</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Advantages of CyberKnife versus conventional radiotherapy methods

- Hospital admission is not required
- No need in usage of anaesthesia
- Post-operative care is minimal
- Applicable for treatment of tumors in any part of body
- No pain, no discussion, no trepanation
- No need to recovery. Patient can return back to daily activity right after the operation and without a delay
- CyberKnife also may treat tumors which were exposed by the maximum allowed dose at a conventional treatment
Indications for CyberKnife® treatment

Intracranial tumors

- Tissues up to 3,5 cm
- Number of lesions less than 6
- Recurrent glial tumors or residual tissues after surgical resection, beam-therapy and chemotherapy

Abnormality of vertebral column and spinal cord

- Size up to 3,5 cm
- Average volume around 40 cm³
- Number of adjacent lesions - 2
Indications for CyberKnife® treatment

Tumors of brain and eyes malleable to removal and treatment:

- pituitary adenoma;
- acoustic neuromas;
- anaplastic astrocytoma;
- arterivenous malformations;
- astrocytoma;
- vestibular schwannoma;
- ganglioblastoma;
- gangliocytoma;
- hemangioblastoma;
- gonocytoma;
- multiform glioblastoma;
- glioma;
- neck glomus tumor;
- cavernous malformations

- craniopharyngioma;
- retina melanocytoma;
- meningioma;
- metastatic lesions of brain;
- trifacial neuralgia;
- neuro schwannoma;
- neurofibromatosis;
- neurocytoma;
- oligodendroglioma;
- cartilaginous tumor;
- chondrosarcoma;
- schwannoma;
- ependymoma
Indications for CyberKnife® treatment

Tumors of spinal cord and vertebral column:
- astrocytoma;
- hemangioma;
- meningioma;
- metastatic lesions in vertebral column;
- neuroma;
- neurofibroma;
- chondroma;
- chondrosarcoma;
- chordoma;
- schwannoma;
- ependymoma

Extra-cranial tumors and lesions of parenchymatous organs:
- hepatocellular carcinoma;
- nasopharynx carcinoma;
- single metastasis;
- osteoblastic sarcoma;
- intraepidermal carcinoma;
- lung cancer (non-small-cell);
- uterine cancer;
- hepatic cancer;
- pancreatic carcinoma;
- renal carcinoma;
- prostate carcinoma;
- colon cancer;
- ovarian carcinoma
Contra-indications for tumor treatment

**Brain**
- Brain dislocation
- Karnofsky PS index less than 60%
- Expected lifespan less than 6 months

**Vertebral column**
- Significant spinal cord compression
- Vertebral instability
- Karnofsky PS index less than 60%
- Vertebroplastics with metal brackets in exposure location
Внимательно – состояние после удаления опухоли 17 лет назад (без представленной мед документации).
При сравнительном анализе МР-томограмм, взвешенных по T1 и T2 ВИ в трёх проекциях по стандартной методике, а также в/в контрастированием, выявлены суб- и супратрогические структуры.
Срединные структуры не смещены.
В области IV-го желудочка определяется образование с бугристыми наружными контурами, состоящая из кистозного и солидного компонентов, общей размером около: вертикальный – 3,7 см, передне-задний – 2,8 см, поперечный – 2,3 см, периферического отека не имеется. IV-й желудочек расширен. Образование деформирует продольговатый мозг, пирамидокинема выражена нерассеяна.
В левой теменной доле, на границе к затылочной доли, кортикально-субкортикально, определяется также кистозно-солидное объемное образование, размером 1,9х1,8х0,7 см, без периферического отека.
При введении 7,5мл контрастного препарата «Гадолин» он выходит непосредственно солидным компонентом в то время как субкортикальные образования (размер солидных компонентов 1,3х1,3х1,3 см и 0,8х0,8х0,7 см соответственно).
Дифференциация серого и белого вещества сохранена. Опухоли заметно выделяются. МР сигнал от подкорковых ядер не изменен. Субкортикальные пространства не расширены. Боковые желудочки мозга умеренно асимметрично расширены, (D<3). III-й желудочек расположен по срединной линии, IV-й желудочек диффузно расширен, базальные грубы доли не изменены.
Сырые области без патологических изменений. Размеры гипофиза в пределах нормы. Стволовые структуры и мозжечок в пределах нормы. Мостомозжечковые узлы без особенностей. Краевая веретеновидная часть не изменена. Придаточные пазухи и ячейки соединительных тканей нормально разработаны правильно. Содержимое гиалина без особенностей.

ЗАКЛЮЧЕНИЕ: Состояние после удаления опухоли. МР-картина кистозно-солидных образований в области IV-го желудочка и в левой теменной доле (возможно, инвагинации характера).

Врач: Баланов О.И.
Abstract from MRI examinations of a brain:

Before treatment

Hemangioblastoma of brain stem, 15 mm diameter of inhomogeneous solid formation, 40 mm front-end of gangliac formation

18.10.2012

After treatment

23.01.2013

Hemangioblastoma of brain stem, 15 mm diameter of homogeneous solid formation, 28 mm front-end of gangliac formation
Treatment results

Before treatment:
A solid ganglion 2.9x2.2x2.8 cm in location of ephippium

After treatment:
A “liquid”-like formation of 2.0x1.4x2.0 cm is visualized in location of ephippium. The solid formation is not detected.
В области турецкого седла определяется объемное образование кистозно-солидной структуры неправильной формы с неровными контурами эндо-суправ-ретроселлярным ростом размерами 2,9x2,2x2,8 см, компримирующее и выражено оттесняющее хиазму кранially. Контуры хиазмы четко не дифференцированы. Выявляется раздвижение сифонов ВСА без признаков вовлечения их в структуру образования.
Турецкое седло увеличено, гипофиз серповидно выстеляет дно турецкого седла, MP-сигнал от гипофиза обычный.
При в/в контрастировании отмечается интенсивное повышение MP-сигнала от солидного компонента образования.
Боковые и III-й желудочки мозга незначительно расширены с небольшой зоной глиоза по периферии передних рогов. IV-й желудочек не изменен.
Субарахноидальные конвекситальные пространства и борозды не расширены.
Срединные структуры не смещены. Миндалины мозжечка расположены на уровне большого затылочного отверстия.
В белом веществе лобных и теменных долей парвентрикулярно и субкортикально определяются немногочисленные очаги сосудистого глиоза размерами до 0,7 см без признаков перифокальной инфильтрации.

Турецкое седло умеренно увеличено. В хиазмально-селлярной области визуализируется «жидкостное» образование, размером: вертикальный – 2,0 см, поперечный – 1,4 см, передне-задний – 2,0 см, с супра-, инфраселлярным расположением.
Воронка гипофиза не визуализируется, хиазма сдавлена, смещена вверх. Сифоны внутренних сонных артерий в процесс не вовлечены.
Желудочки обычной формы и размеров. Субарахноидальные пространства существенно не расширены.
Дифференциация серого и белого вещества сохранена. В белом веществе головного мозга, в паравентрикулярных и конвекситальных областях визуализируются очаги диаметрами 0,2-0,4 см, вероятно сосудистого генеза, местами сливной характера. MP-сигнал от подкорковых ядер не изменен.
Loss of visual field at the left eye
17.09.2012
BEFORE TREATMENT

Slight improvement
29.11.2012
AFTER TREATMENT

Slight improvement
04.04.2013
Loss of visual field at the right eye
17.09.2012
BEFORE TREATMENT

Loss of visual field
28.11.2012
AFTER TREATMENT

Improvement
03.04.2013
Treatment of vertebral column
Radiologic treatment modes for prostate cancer

Sealed-source radiotherapy

Beam-therapy

Radiosurgery
Indications for treatment of prostate cancer

- Stage Ib-IIb
- PSA up to 20 ng/ml
- Gleason < 8
- Fiducial implantation is required
- A neoadjuvant hormonotherapy during 3 months is possible when high risk is detected
CyberKnife

- allows to correct abrupt movements of prostate automatically;
- resolves a problem of dose budget for critical structures due to hundreds of ionized beams’ directions.
A new goldmarker for visualization of organs during radiotherapy.

GOLDLOCK® is a new unique goldmarker, developed for visualization of the prostate during planning, simulation and treatment of prostate cancer. By inserting the goldmarkers in the prostate, an accurate position of the organ helps to reduce the margins during external radiotherapy, thus minimizing the risk of affecting adjacent organs.

- Proven, safe material
- Easy to insert
- Stays in the organ
- Cost effective
Features:
- Package of 1, 3, and 4 preloaded needles
- "Star-shaped" design
- Needle with a pusher to pull out the goldmarker

Specification:
- 24-carat gold with different sizes
- Needle length: 20cm
- Single use, sterile, with a shelf-life of over 2 years
Creating treatment plan

A great number of various experts participate in treatment. Neurosurgeons, oncologists and other domain experts may be required depending on patient’s diagnosis. Roentgenologists perform CT, MRI, PET procedures. Then the data is sent to radiologists who outline tumor and critical organs. Medical physicists calculate a dose exposure.
Treatment at CyberKnife®
Treatment at CyberKnife®

Distribution of ionizing radiation beam
TomoTherapy is a new class of radiology equipment which provides with a slice by slice radiation of structures and allows to treat lesions of irregular and long-haul shape and multiple small tumors both
What is TomoTherapy

TomoTherapy is a combination of linear accelerator and computed tomograph. Before the beam-therapy starts, the system detects tumor in diagnostic mode and then radiates it in treatment mode. Healthy tissues are not irradiated during this procedure.
When long-haul areas are irradiated by TomoTherapy, it is not necessary to couple edges which results in improvement of dose distribution.
TomoTherapy allows to reduce irradiation of healthy tissues surrounding a tumor which is not always possible an the other type equipment.
Unique character of dose delivery

TomoTherapy is equipped with a linear accelerator with multi-leaf collimator functionally movable patient table in order to achieve the most efficient irradiation being adequate to treated tumor.
TomoTherapy has the following advantages in comparison with conventional beam-therapy:

Each session of tomoTherapy starts from diagnostics by computed tomography. The system readjusts in order to irradiate a tumor only.

Tomotherapy irradiates large tumor. A conventional irradiator is capable of exposing only a part of tumor. Therefore, the radiation is exposed to zones with possible edge overlapping. TomoTherapy irradiates the tumor independently on its dimensions without excess of dose.

TomoTherapy is capable of irradiating the bone marrow only without exposure on vital organs.
Development of treatment plan
Distribution of exposure dose
Application of systems:

- **CyberKnife** performs a high-precision radiosurgery treatment of various localizations.

- **CyberKnife** provides with a minimal damage to healthy tissues and non-toxity after-treatment cycle due to a presence of multipurpose adaptive control systems.

- **TomoTherapy** treats multiple or single small formations as well as long-haul lesions (up to 150 cm), hardly accessible localizations (e.g. tissues of brain and spinal cord, pleura, pericardium etc.)
Cyclotron and radiochemical facility
Fluorodeoxyglucose (abbr. FDG) is a manufactured equivalent of glucose. Full title is 2-deoxy-2-(¹⁸F)fluoro-D-glucose. FDG is utilized in nuclear medicine for PET performance. The molecule contains a radioactive (positron emitting) ¹⁸F nuclide. Injectable FDG represents pyrogen-free sterile colorless solution with volume activity of (40±5000) MBq/ml. The FDG refers to deoxy sugar group.
Automatic fractionator

Technical data

The system is intended for fractioning of synthesized radiopharmacy into vials and syringes and for sterilization simultaneously. The system is capable of fractioning up from 5 vials or syringes simultaneously. The products are ejected into tungsten containers. Radiopharmacy fractioning is accompanied by sampling for quality control, sterility test, endotoxin test. After the quality control is passed, radiopharmacy is transported into division of radionuclide diagnostics by means of elevator where it is injected to patients. Fractionator is protected by lead at all surfaces with a wall thickness of 75-100 mm. Ionization chamber is protected by lead with wall thickness of 75-100 mm. Work environment class: A (single flow area). HEPA filter with laminary flow: 99,995%
Routing of radiopharmacy
Primary reception of patient

Non-resident patients should register at reception desk and obtain a primary consultation via telephone in Voronezh:
+7 473 200-22-33
An administrative officer will call back in two days. The patient will have to send a documents set according to a checklist prepared by oncologist (provided by administrative officer)

The documents set could be delivered in the following ways:
* via express mail to address: Ostuzheva, 31, Voronezh, 394033;
* file exchange system (see details on www.oncoclinic.su)

NOTICE: MRI and CT results obtained from Chernozemye, Chernozemye-Region and Diagnostica-Extra clinics can be sent to Voronezh Oncoclinic automatically

The documents are to be considered in 3 days. After all, the administrative officer calls back to patient in order to inform about available medical aid for such patient personally

Examinations are done on the fly and according to preliminary arrangement

Oncologist’s advice is provided free of charge!
Prospects of private-public partnership

Represented capabilities of treatment and diagnostics are rated for patient-specific selection with clear indications in order to achieve the greatest efficiency.

A.V. Gordeiev, the Governor of Voronezh Region, underlined an importance of high-tech medical aid availability at Voronezh Oncoclinic. Also he marked a possibility creating the model of private-public partnership.

One of the key governor’s assignments has been a necessity to build a team for selection of patients and provision a free of charge high-tech medical aid with use of Voronezh Oncoclinic resources beginning from the year 2013. Nowadays, the clinic works in commercial mode.
Visit of Healthcare Federal Minister

Veronica Skvortsova, the Healthcare Federal Minister, paid a duty-call in Voronezh Oncoclinic. During a visit, she was shown the newest methods of cancer treatment with use of unique CyberKnife and TomoTherapy equipment.

Thus, an oncologic patient obtains up-to-date multi-type diagnostics and appropriate treatment both with use of unique equipment which has no equals in Russia.
Thanks for your time!