

**Internationale Gesellschaft zur Erforschung von Hirntraumata IGEH
International Neurotrauma Research Organization INRO**



Annual Report 2009

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How do we work

Day-to-day management:

The office of INRO is run by **Sasha Brazinova**. Dr. Alexandra Brazinova is a medical doctor with further education in public health and PhD from Social Medicine. Dr. Brazinova is the Executive Director of INRO. She does administrative management, works on the development of project proposals, coordinates project implementation, writes project reports. Dr. Brazinova is the project coordinator for the Prehospital project that is implemented by INRO in 2008-2012. In her scientific work she focuses on qualitative research, writes and participates in development of scientific articles. She also teaches at the Department of Public Health of Trnava University as a part time lecturer.

Prof. **Martin Rusnak** is the president of INRO's Board of Directors. He oversees project implementation, development of new project and scientific publications, data analysis. Prof. Rusnak is also the dean of the Faculty of Health Care and Social Work, Trnava University, Slovak Republic (as of February 2010).

Prof. **Walter Mauritz**, the vicepresident of INRO's board of directors, is the chairman of Department of Anaesthesiology at Lorenz Boehler Trauma Hospital in Wien, which is also a teaching facility. Furthermore, Dr. Mauritz is a visiting professor at Trnava University. Prof. Mauritz is the project leader for the Prehospital project that is implemented by INRO in 2008-2012. Prof. Mauritz is the most valuable scientific and clinical advisor of INRO and he oversees the development of scientific work.

Close academic affiliation of prof. Rusnak and Mauritz brings students and young scholars interested in brain trauma research into INRO's activities.

ACTIVE research fellows at IGEH are:

Dr. **Johannes Leitgeb** is a trauma surgeon at the University Clinic for Emergency medicine, General Hospital Wien (AKH). He has been involved in project activities focused mainly on clinical evaluations of brain trauma treatment data. Currently he is working on his PhD thesis on TBI management and writes and participates in development of scientific articles about INRO research outcomes.

Dr. **Marek Majdan** comes from Trnava University. He has a PhD in Environmental Health and Geographic Information Systems. For INRO he analyzes the data from the ITCP database, using the powerful statistical tool R software. As of 2010 he will be responsible for data analysis of Prehospital project data. Dr. Majdan also participates in the development of scientific papers and project proposals.

Dr. **Zuzana Cernuskova** teaches at Trnava University. She is responsible for the follow-up of past INRO collaborators project. She participates in the development of scientific papers.

DI **Ivan Janciak** is an IT specialist, working at the University of Wien. He developed and maintains the ITCP and the Prehospital project databases for IGEH.

FORMER (passive) research fellows at INRO are:

Dr. **Lucia Lenartova** works as a consultant in public health in the Slovak Republic and abroad and as an INRO team member she participates in the development of scientific papers and works on her PhD thesis on brain trauma at Trnava University.

Dr. **Ingrid Wilbacher**, who used to work at INRO in 2002 – 2005, works for Austrian Social Insurance Company and finished her PhD thesis at Trnava University in 2009.

Dr. **Annalisa Rosso**, the former INRO team member has left for a UNDP project in Cairo, but keeps in contact.

Dr. **Valeria Rudel**, an anaesthesiologist currently on maternity leave works with INRO on the cooperation with the Russian Association of Anaesthesiologists and Intensivists and on the development of future project proposals.

ACTIVITIES in 2009

Projects implemented

1.

In 2009 we have been preoccupied with the 'Prehospital Project' (Project for optimizing early care for patients with severe brain trauma) (Projekt zur Optimierung der Erstversorgung von Patienten mit Schädel-Hirn-Trauma).

This is a project funded by the grant of the Austrian Ministry of Health (BMGFJ) and Worker's insurance fund (AUVA).

The contracts of INRO with both AUVA and BMGFJ to implement this project were signed in October 2008. The whole project is planned for 5 years, starting in 2008 and ending in 2012.

The summary of the project is the following:

The project has started in the end of 2008. By the end of 2009 we have collected data on 200 patients in our database. We aim to collect about 400 patients by the end of March 2010. After the data analysis we will prepare Prehospital and Early Hospital TBI treatment guideline for Austria (2011). The participating centers will implement the guideline (2012). After the second data collection period we will analyse the data of patients treated according to the implemented guideline (2013). The project objective is to improve health outcomes of TBI victims by standardizing the treatment, with a special focus on the crucial early phase of the treatment.

In 2009 we have implemented the following steps of the project:

Jan., Feb.- communication with project centers

Feb. - meeting with representatives of 4 newly invited hospitals that joined the project late

March – visit to 17 participating centers, delivery of data collection

March, April assistance to the centers to obtain approvals from the local or regional ethical committees

April – start of data collection in most of the centers

May, June – pilot data collection from Lorenz Böhler Trauma Hospital (Wien) and data entering into the electronic database; preliminary project report submitted to both BMGFJ and AUVA.

July – beginning of data entering: St.Pölten, Wien-Meidling, Wien-L.Böhler

Aug – data entering: Linz, Wien-Meidling, Wien-L.Böhler; data cleaning

Sep – data entering: Wiener Neustadt, Amstetten, Linz, Graz, Wien-L.Böhler; data cleaning

Oct – data entering: Salzburg (LKH and UKH), Klagenfurt, Linz; data cleaning; contacting the patients 6 months after injury

Nov – data entering: Linz, Graz, Wien-Meidling; data cleaning; contacting the patients 6 months after injury; Annual Report submitted to BMGFJ

Dec – data entering: Wiener Neustadt, Linz, Innsbruck, Feldkirch; data cleaning; contacting the patients 6 months after injury.

The entering of the data from the patient documentation into our electronic database is done by personal visit of the project manager to each center and entering the data into the computer at the site, so the center contact person can look up and provide the missing data on the spot.

Data cleaning is done in one more step – entered data are controlled and all the missing information is summarized and sent to the treatment center for revision.

Additional information is added into the database.

This way, the data are quite complete and only a very little information gets missed.

By the end of 2009, we have collected data on treatment of 200 patients in the electronic database. Since the data collection period started later, due to the ethical committee approvals, the data collection period was prolonged till end of March 2010, in order to achieve the goal number of 400 patients minimum.

Participating hospitals:

1. LKH Amstetten
2. LKH Feldkirch
3. Univ.klinik Graz
4. LK Waldviertel Horn
5. Univ.klinik Innsbruck
6. LKH Klagenfurt
7. AKH Linz
8. LKA Salzburg
9. LK Wiener Neustadt
10. LK St.Pölten
11. KH Schwarzach/Pongau
12. UKH Graz
13. UKH Linz
14. UKH Salzburg
15. UKH Wien XII (Meidling)
16. UKH Wien XX (Lorenz Boehler Unfall Krankenhaus)

Project time table:

- In the first project phase IGEH develops a database for patient data collection (Oct08 – Mar09)
- Afterwards the database and data reporting protocols is introduced to the cooperating hospitals and personnel is trained in data reporting (Jan-Mar09).
- Further on, patient data will be collected on a regular basis from the hospitals (Apr09-Mar10)
- Data will be cleaned, reviewed and analyzed for the differences of patient management between the treatment centers and the use of standardized procedures (guidelines) for prehospital TBI management (Apr – Jul10)
- A unified prehospital TBI management guideline will be developed and implemented in the cooperating hospitals and made publicly available (Aug10 – Jul11)
- In the second round of data collection, patient data will be collected again (Aug11-Nov11)
- The collected data will be checked for the guideline compliance and change in patients' health outcomes (Dec11-Jul12)

The funding for the Prehospital project is over Eur 170 000 from the Ministry of Health and about Eur 100 000 from AUVA. Project is planned for 5 years.

2.

Apart from the Prehospital project we have been implementing a **project on follow-up of all centers** working with INRO over the past decade. We have developed a questionnaire and we are contacting all treatment facilities that have been involved in INRO activities, to assess their adherence to TBI guidelines over time.

Project proposal submitted

In 2009 we have developed a project for Austrian-Slovak crossborder cooperation in the neighboring regions - '**Improving quality of intensive care in hospitals of selected regions in Austria and Slovakia**'. The aim of the project was to level the quality of delivery of care for TBI management in the participating centers. The proposal was withdrawn shortly before the submission due to technical difficulties.

Publications developed and/or submitted

In 2009 we have developed and submitted the following scientific article:

Mauritz W, Leitgeb J, Wilbacher I, Majdan M, Janciak I, Brazinova A, Rusnak M.: Outcome of brain trauma patients who have a Glasgow Coma Scale score of 3 and bilateral fixed and dilated pupils in the field. Eur J Emerg Med. 2009 Jun;16(3):153-8. PMID: 19282759

Educational activities and Conferences

- In June 2009 Sasha Brazinova participated in EMN (**European Multidisciplinary Neurotraumatology Academy**) conference in **Kaunas, Lithuania**, with a presentation "Role of clinical epidemiology in continuous improvement of TBI quality of care".
- **Conference presentations – publications in Books of proceedings:**

14th Euroacademia Multidisciplinaria Neurotraumatologica Congress (4.-6. 6.2009, Kaunas, Lithuania): Bražinová, A., Rusnák, M., Mauritz, W., Majdan, M.: Role of clinical epidemiology in continuous improvement of TBI quality of care.

IGEH also participates in a project on Brain Trauma Epidemiology with Trnava University, Slovak Republic. Data on traumatic brain injury in Trnava region in the Slovak Republic were presented in a conference November 2009 in Trnava.

- **Conference presentations – submitted**

In the end of 2009 the following presentations or posters have been prepared and submitted to **the Eighth World Congress on Brain Injury of the International Brain Injury Association** that will be held in March 10-14, 2010 in Washington DC.:

Brazinova, A, Mauritz W, Rusnak M, Majdan M, Leitgeb J:

Outcome of Geriatric Patients with Severe Brain Trauma who have Glasgow Coma Scale Scores <5

Leitgeb, J, Mauritz W, Brazinova A, Rusnak M, Majdan M:

1. *Factors influencing long-term outcome after epidural hematoma*
2. *Factors Influencing Long-Term Outcome of Operatively Treated Patients with Acute Subdural Hematoma*

Majdan, M, Rusnak M, Brazinova A, Mauritz W, Leitgeb J:

Considering the Validity of Two Existing Prediction Models to Predict the Outcome of Patients after Severe TBI in the ITCP Database of the International Neurotrauma Research Organization.

- **Educational activities**

Two Teaching seminars titled **Traumatic Brain Injury: Research and Management** have been prepared, with a detailed outline of both seminars and list of presenters. The first announcement was widely distributed in the beginning of 2010. IGEH was planning to disseminate the knowledge and skills gathered through all the implemented project to the international audience. Due to the low number of applicants, the seminars have been postponed to 2010. The announcement will be distributed again through all available means.

Ingrid Wilbacher finished her PhD thesis at Trnava University. Prof. Rusnak is her scientific advisor.

Meetings

As in the previous years, weekly meetings have been held in the INRO premises on Tuesdays. At these meeting, the project team discusses progress of planned activities, as well as new ideas and plans.

Apart from regular meetings of INRO / IGEH team, we had several strategically important meetings for our future existence:

We have met with Dr.Nicholas Steinhoff, who is organizing the 1st European Traumatic Brain Injury Conference, which is being held in Vienna in February 2011. INRO / IGEH was proposed to lead a section on use of guidelines at this conference.

In the end of the year we have met with Mr.Karas, Austrian member of European Parliament. We have discussed with him the options for INRO's involvement in activities at the European level. We will pursue these chances further and hopefully will initiate Europe-wide TBI network project. The meeting was organized thanks to the initiative of the board members.

We are in close contact with prof.Andrew Maas and Dr.Fiona Lecky, both clinicians active in the field of brain trauma / trauma and both involved in large Europe-wide brain trauma / trauma registries (networks EBIC / TARN, respectively). We are working on future collaborations with these networks.

PLAN FOR 2010

Projects implemented

Our main activity in 2010 is again the **'Prehospital project'**.

Within this project, we will finish the data collection phase in March 2010, finalize data entering in May 2010 and perform data analysis in May and June 2010.

Conference on development of new Guidelines on Prehospital and Early Hospital TBI Treatment, with participation of all project center representatives, will be organized in fall 2010.

The new Guidelines will be then implemented in the participating centers.

We will continue with the implementation of the **project on follow-up of all centers.**

The aim of the project is the assessment of the adherence of TBI treatment centers to clinical guidelines over time. We are contacting all TBI treatment centers that had participated with INRO in the past to see how they revised the TBI management according to our recommendation and how that impacted the patient outcomes.

New project proposals

In 2010 we will submit project proposals for creation of international register of TBI (creation of registries is one of the priorities within the Health Directorate of the European Commission).

We will submit the proposals to both Austrian (such as Österreichische Forschungsförderungsgesellschaft – FFG), as well as European (European Commission) agencies.

In order to create an international network for a project of Europe-wide impact, we have scheduled a meeting with Dr.Fiona Lecky, coordinator of international trauma network TARN. The meeting will take place in May/June 2010.

Publications planned in 2010

In the first quarter of 2010 the following paper will be submitted in Journal of Neurotrauma:

Brazinova A, Mauritz W, Leitgeb J, Wilbacher I, Majdan M, Janciak I, Rusnak M:
Outcomes of patients with severe traumatic brain injury who have Glasgow Coma Scale scores of 3 or 4 and are over 65 years old

Following papers will be finalized and submitted in 2010:

Leitgeb J et al:

1. Subdural hematoma in TBI patients outcomes,
2. Epidural hematoma in TBI patients outcomes,
3. Influence of surgical specialty (neuro- versus trauma surgeons) on TBI outcomes

THANK YOU FOR YOUR ATTENTION AND FOR THE CONTINUOUS SUPPORT!