

REGIONAL ANAESTHESIA PRACTICE IN GREECE [ESRA Hellas Report]

A Retrospective, Multi–Centre, Nation–Wide Survey



Introduction I.

RA Techniques → Essentials of Perioperative Care

- Optimum Postop Recovery Profile
- Multiple Advantages
 - ↑ quality, site-specific postop analgesia
 - early mobilization – rehabilitation
 - fast-track anaesthesia & surgery
 - ↓ complications rates versus GA
 - cost-effective anaesthetic technique
 - ↑ patients satisfaction
 - ↓ hospital LOS
 - Ca recurrence – inflammation
 - coagulation
 - bowel function



Power I, et al. Anaesthesia, 2010; 65 [Suppl 1]: 38 – 47
Kettner SC, et al. Br J Anaesth, 2011 [Suppl 1]: i90 – i95
Carli F et al. Reg Anesth Pain Med, 2011; 36: 63 – 72
Memtsoudis SG et al. Anesthesiology, 2013; 118: 1046 – 1058

Introduction II.

Continuously Growing Interest in RA



Great Variability in

Frequency of Perioperative RA Application

- over years / among hospitals & countries
 - inter-hospital variations
 - inter- and intra- country differences
- information on extend of RA use → sparse
 - nation wide
 - european & international level
 - usually → reported trends



Buist RJ. J R Soc Med, 1990; 83: 709 – 712
Rawal N. Reg Anesth Pain Med, 1995; 20 (Supplement): 162
Holmstrom B, et al. Acta Anaesthesiol Scand, 1997; 41: 565 – 572
Hadzic A, et al. Reg Anesth Pain Med, 1998; 23: 241 – 246
Rukewe A, Fatiregun A. Anesth Analg, 2010; 110: 243 – 244
Polaner DM, et al. Anesth Analg, 2012; 115: 1353 – 1364

ESRA Hellas Initiative

■ ESRA Hellas Survey

- March 1st – June 30th 2012
- **1st nation wide attempt**
- Census Report of RA Practice in Greece



■ Documentation of Trends in RA Application

- Hospitals of the Greek Territory → Year 2011
- RA Annual Utilization → Application Frequency & Rates

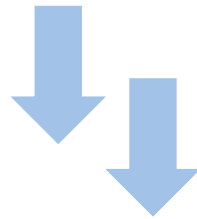
■ Data Collection

- documentation of current situation / benchmark for future comparisons
- evaluation of education procedures / training programs
- assessment of efficacy of teaching process / knowledge expansion
- hospital resources / necessity for technical development in RA

Survey Implementation

■ Type of ESRA Hellas Survey – Study

- Retrospective
- Nation–Wide
- Multi–Centre
- Observational
- Cross–Sectional



■ Based on a Questionnaire

- structured
- predefined
- emailed to participating collaborators



Aim of ESRA Hellas Survey

Main Outcome Measures

■ Primary Endpoint

- Documentation of RA extent of use
- Types of Surgery RA is applied for
- Frequency – Preference – Familiarity with RA in Greece

■ Secondary Objectives

- Investigation of Differences between Hospitals
- Factors Identification → influencing RA Routine Application
- Reveal of Existing Weak Points – Drawbacks
- Better Approaches for Clinical Practice Improvization



Ethics & Study Approval

- **ESRA Hellas Scientific Committee**
[Ethics Committee]

- **Survey Protocol Approval**
- **Questionnaire Evaluation**



Survey Methodology



ESRA Hellas Survey Sample

■ Setting

- Greek Anaesthesiology Departments
- Public & Private Hospitals

■ Intervention – Survey Period

- Survey from March 1st to June 30th 2012

■ Participants

- Chairmen of Anaesthesiology Departments
- Study Collaborators

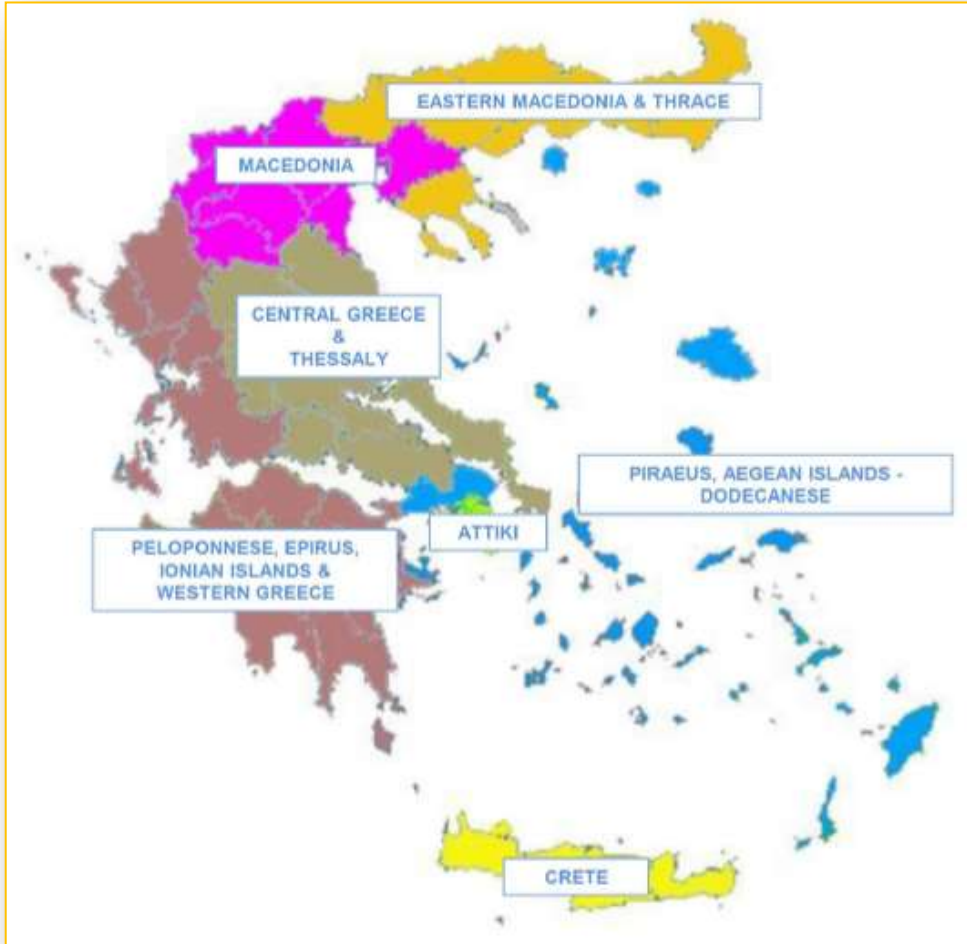


ESRA Hellas Survey Participants

Hospital characteristics	Number of hospitals with active anaesthesiology departments (n)	Number of contacted anaesthesiology departments (n) (%)
Hospital category		
University hospitals, (public)	1	1 (100)
Central NHS hospitals, (public)	18	15 (83.3)
Central mixed university and NHS hospitals, (public)	26	24 (92.3)
County-peripheral hospitals, (public)	64	23 (35.9)
Military hospitals, (public)	12	6 (50)
Special public hospitals*	8	5 (62.5)
Private hospitals	101	54 (53.5)
Sum of all institutions	230	128 (55.6)

- 230 Anaesthesiology Departments in Greece
↓
- 129 in Public Sector
- 101 in Private Sector
[Total 230]
- Contacted Departments
128 → 55.6%

ESRA Hellas Survey Participants



- 1. Capital of Athens and Rest of Attiki
- 2. Piraeus and Aegean Islands – Dodecanese
- 3. Macedonia
- 4. Eastern Macedonia – Thrace
- 5. Peloponnese, Epirus, Ionian Islands and Western Greece
- 6. Central Greece – Thessaly
- 7. Crete

Participating Collaborators

- **Potential Respondents**



Directors of Greek Anaesthesia Departments

- participation: voluntary
- monetary incentive: not provided
- participation agreement: informed consent
- freedom to participate or withdraw from study
- patients & hospital data: preserved anonymity
- emerging data: kept safely



Survey Questionnaire

- **advice**



sound inclusion of accurate data

- **very few open questions**



bias avoidance

- **4 question formats**

- yes or no
- selection of best possible answer
- out of 2 – 5 alternatives
- fill – in the blanc
- check – off options



- **5 senior anaesthetists**

- consultation
- questionnaire assessment
- review of design & structure

Survey Questionnaire

Regional Anesthesia Practice in Greece during 2011

CONTACT DETAILS/HOSPITAL TYPE

(*optional)

Anesthesiologist's name*:

Address/City.....

TelephoneE-mail.....

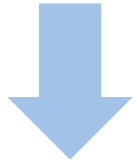
Name of Hospital*:

Type of Hospital:

- a. University/NHS
- b. NHS
- c. Military
- e. Private

Specialized (and what kind)

Survey Questionnaire



Structure: 4 Parts



Survey Questionnaire

PART I — GENERAL INFORMATION REGARDING REGIONAL ANESTHESIA (RA) TECHNIQUES

No of Operations Performed in Your Hospital Under Any Anaesthesia Type in 2011

No of Operations Performed under RA in 2011

No of CNBs Performed in 2011

No of PNBs Performed in 2011

Survey Questionnaire

PART II — CENTRAL NEURAXIAL BLOCKS

Subarachnoid Anaesthesia (Spinal)

No. of Spinals Performed in 2011 in Your Department.....

From Those How Many Were Performed For the Following Types of Operations:

- | | | | | | |
|----------------------------|-----|--------------------------|----|--------------------------|---------------------------|
| A. General Surgery | YES | ☐ | NO | ☐ | Number..... |
| B. Orthopedic Surgery | YES | ☐ | NO | ☐ | Number..... |
| C. Obstetrics — Gynecology | YES | ☐ | NO | ☐ | Number..... |
| D. Vascular Surgery: | YES | ☐ | NO | ☐ | Number..... |
| E. Urological Surgery: | YES | ☐ | NO | ☐ | Number..... |
| F. Other Type of Surgery: | YES | ☐ | NO | ☐ | Specify Number..... |

Epidural Anaesthesia

No. of epidurals performed in 2011 in Your Department.....

From those how many were performed for the following types of operations:

- | | | | | | |
|----------------------------|-----|--------------------------|----|--------------------------|---------------------------|
| G. General surgery | YES | ☐ | NO | ☐ | Number..... |
| H. Orthopedic surgery | YES | ☐ | NO | ☐ | Number..... |
| I. Obstetrics — Gynecology | YES | ☐ | NO | ☐ | Number..... |
| J. Vascular surgery: | YES | ☐ | NO | ☐ | Number..... |
| K. Urological surgery: | YES | ☐ | NO | ☐ | Number..... |
| L. Other type of surgery: | YES | ☐ | NO | ☐ | Specify Number..... |

Number of combined spinal epidurals performed in your department in 2011:.....

Survey Questionnaire

PART III — PERIPHERAL NERVE BLOCKS

Number of PNBs performed in 2011 in your department

Number of PNBs performed for anesthesia/analgesia of:

- | | | | | |
|---------------------|--------------------------|-----|--------------------------|---|
| a. Upper Limb | PNBs were performed for: | | | |
| b. Lower Limb | Anesthesia | YES | ☐ | NO ☐ Number |
| c. Trunk | Postoperative Analgesia | YES | ☐ | NO ☐ Number.... |
| d. Head | Both | YES | ☐ | NO ☐ Number..... |
| e. Other | | | | |

Peripheral Nerve Catheter Insertion:.....

Time catheter was left in place:

For PNBs Performance the Following Equipment/Technique was used:

- | | | | | | |
|--------------------------------------|-----|--------------------------|----|--------------------------|---------------------------|
| a. Neurostimulator | YES | ☐ | NO | ☐ | Number. |
| b. Ultrasounds | YES | ☐ | NO | ☐ | Number |
| c. Combination of NS and Ultrasounds | YES | ☐ | NO | ☐ | Number |
| d. Paresthesia | YES | ☐ | NO | ☐ | Number |
| e. None of the Above | YES | ☐ | NO | ☐ | NumberSpecify |

Survey Questionnaire

PART IV — ANESTHESIOLOGIST EXPERIENCE IN RA

Number of Consultant Anesthesiologists in Your Department in 2011:.....

How many of them are familiar/perform RA Techniques

- a. CNBs
- b. PNBs
- c. Both

Reasons for not applying RA (Tick or Circle)

- Lack of equipment
- Lack of knowledge or Education
- Lack of time
- Surgeons preferences
- Other/specify.....

Statistical Analysis

- **Returned – Collected Questionnaires**
 - evaluated for consistency within section
complete data, missing values
 - analyzed by SPSS 20.0
- **Data – Results Presentation**
 - mainly in descriptive form
total numbers, frequencies, percentages
 - comparisons (where appropriate)
 - χ^2 statistical test
 - $p < 0.05$: statistically significant



Results



European Society of Regional Anaesthesia
HELLAS



Results of ESRA Hellas Survey

Preliminary Results Presented

- **Free Paper in 2012**

14th Panhellenic Congress of RA, Pain Therapy & Palliative Care

Costa Navarino, Peloponnese, Greece

1st Prize Award for Best Free Paper Presentation

- **E – Poster in 2013**

32nd ESRA Annual Congress 2013

Glasgow, Scotland, UK



- www.esrahellas.gr



Results of ESRA Hellas Survey



Final Results Published

Original Article

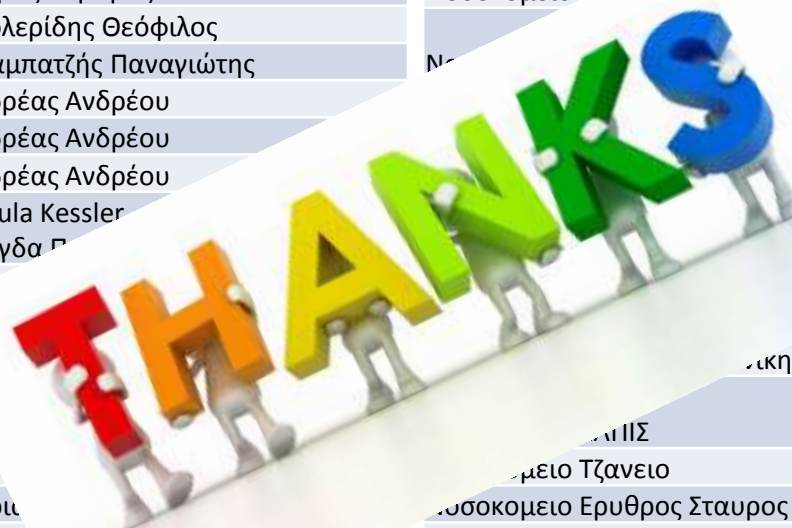
Regional anesthesia practice in Greece: A census report

Erifili Argyra, Eleni Moka¹, Chryssoula Staikou, Athina Vadalouca, Vassileios Raftopoulos², Evmorfia Stavropoulou³, Zoi Gambopoulou⁴, Ioanna Siafaka

Department of Anesthesiology, Pain Relief and Palliative Care Unit, Aretaieio Hospital, Medical School, University of Athens, Athens 11528, Greece, ¹Department of Anesthesiology, Creta Interclinic Hospital, Heraklion 71304, Crete, Greece, ²Department of Nursing, Mediterranean Research Centre for Public Health and Quality of Care, Cyprus University of Technology, Lemesos, Cyprus, ³Department of Anesthesiology, General Hospital "ELPIS", Athens 11522, ⁴Department of Anesthesiology, General Hospital of Attiki "KAT", 145-61, Athens, Greece

Participating Hospitals

HOSPITAL	RESPONSIBLE ANAESTHESIOLOGIST	HOSPITAL	RESPONSIBLE ANAESTHESIOLOGIST
Ασκληπιείο Βούλας	Αργυρώ Μελά	Παν. Νοσοκομείο Ηρακλείου (ΠΑΓΝΗ)	Λεφάκη Τατιάνα
Γεν Νοσοκομείο Ξάνθης	Αλέξανδρος Μακρής	Γ. Νοσοκομείο Κορίνθου	Νίκος Νούλας
Νοσοκομείο Αμαλία Φλέμινγκ	Ελπίδα Αντωνοπούλου	Γ. Νοσοκομείο Τρικάλων	Στέλλα Ντούβλη
Γεν Νοσοκομείο Ρόδου	Θωμάς Σαμαράς	Νοσοκομείο Πάφου	Σταύρος Λιβάνιος
Γεν Νοσοκομείο Βόλου	Τσολερίδης Θεόφιλος		Ζωή Γαμποπούλου
Νοσοκομείο 401	Αραμπατζής Παναγιώτης		Βασιλική Βρεττου
Νοσοκομείο ΓΝΑ 251	Ανδρέας Ανδρέου		Ελλη Καρανικα
Νοσοκομείο NIMITZ	Ανδρέας Ανδρέου		Ελενη Μοκα
	Ursula Kessler		Νίκη Μπαρδάτσου
Γεν Νοσοκομείο Λειβαδιάς	Μάγδα Ραφαηλίδου		Μπεκιάρη Αντα
Γεν Νοσοκομείο Δυτικής Αττικής	Φωτεινή Καρανικα		Μακάρα Ιωάννα
			Μαρίνα Αρναουτογλου
Γεν Νοσοκομείο Μολάων			Γρηγορης Βογιατζης
Μαιευτήριο Αλεξάνδρας			Ελενη Κατσικα
Νοσοκομείο Αλεξανδρούπολης	Βασιλική Καρανικα		Σταυροπουλου Εφη
Νοσοκομείο Νίκαιας	Χρυσή Καρανικα		Χελμη Αγαπη
Γεν Νοσοκομείο Αιγίου	Κυριακή Καρανικα		Αβραμιδου Αλεξανδρα
Νοσοκομείο Ιπποκράτειο, Αθήνα	Μαρία Καρανικα		Μαυροματη Ελενη
Νοσοκομείο Πάτρας Αγ. Ανδρέας	Σαραντάκης Γεώργιος		Πλεσσια Ελενη
Νοσοκομείο Αττικόν	Σαραντάκης Γεώργιος		Διπλας Διονυσης
Γεν Νοσοκομείο Λάρισας	Μπόγκα Ρίτσα		Χαϊνακη Ρενα
Νοσοκομείο ΙΑΣΩ Θεσσαλίας	Αγαθή Κατσιλέρου		Ατζαρακη Αικατερινη
Γεν Νοσοκομείο Αγ. Νικολάου	Σοφία Παπαντωνάκη		Σαουλίδης Δημήτριος
Νοσοκομείο Θριάσειο	Αναστασίου Μανώλης		Μαρια Καρανικολα
		Κλινικη Καπακη Χανιων	Μαρκαντωνη Σοφια



Contact and Response Rate

■ **Contact Rate: 55.65%**

128 over 230 Anaesthesiology Departments

- 74/129 in Public Sector (57.36%)
- 54/101 in Private Sector (53.46%)



79.9% of Operations performed in Greece in 2011

[421.493 over 527.263 surgical procedures]

■ **Response Rate: 51.56%**

66 over 128 Anaesthesiology Departments

- 40/74 in Public Sector (54.05%)
- 26/54 in Private Sector (48.15%)



RA Application Rates in Greece (2011)



Applied in almost ½ of operations

- 45.8% (85.386 / 187.703)
- 95% CI: 0.4519 – 0.4581



Sample Size Calculation

- **Given that the Proportion of RA Utilization**
45.8% in 2011 in Greece



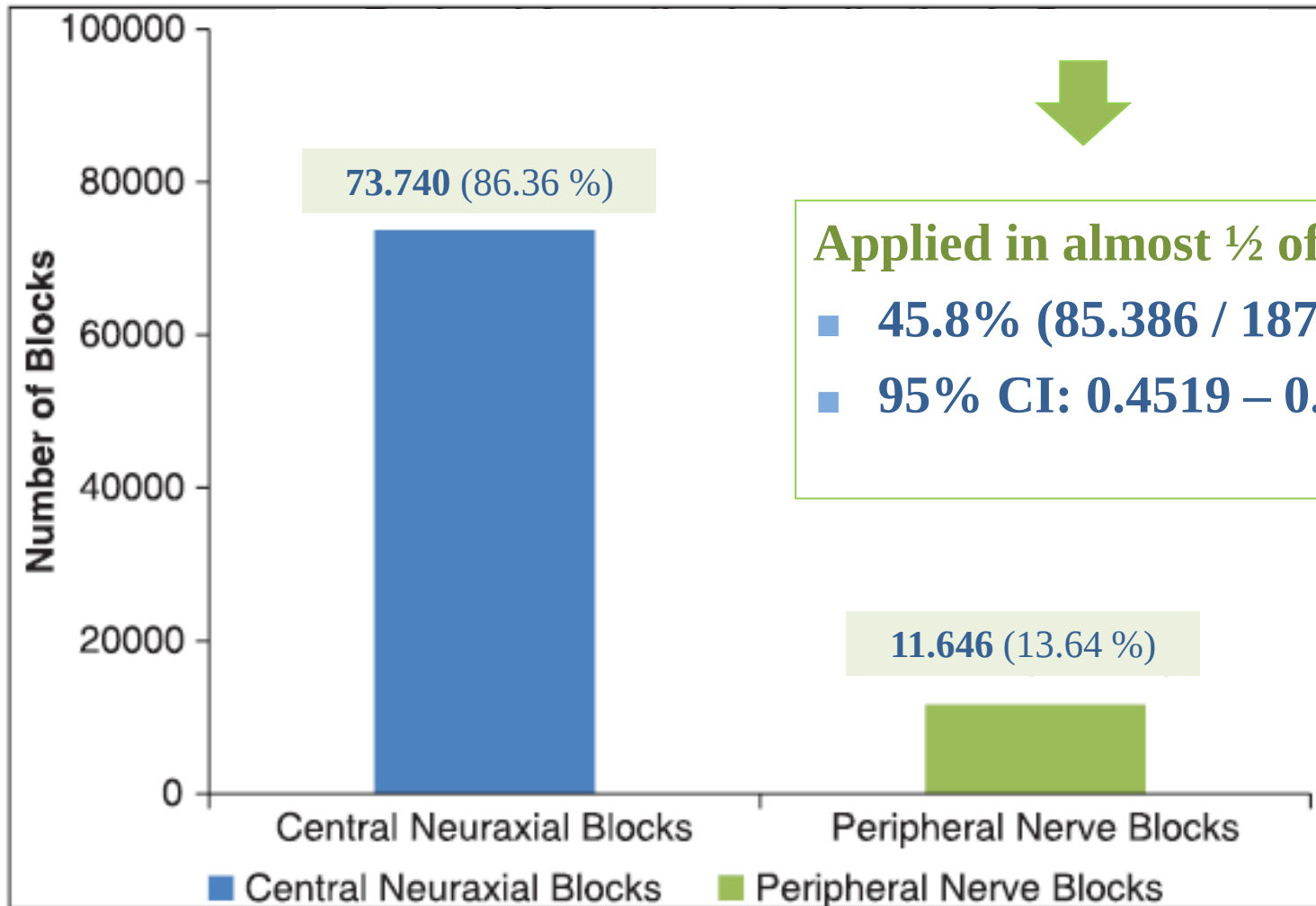
- **Retrospectively: Comparison of a Proportion**
 - Margin of Error: 0.05
 - Confidence Interval [CI]: 95%
 - Null Hypothesis = 50%



- **Min Required Sample Size for Valid Conclusions**
3.744 operations in total to be included



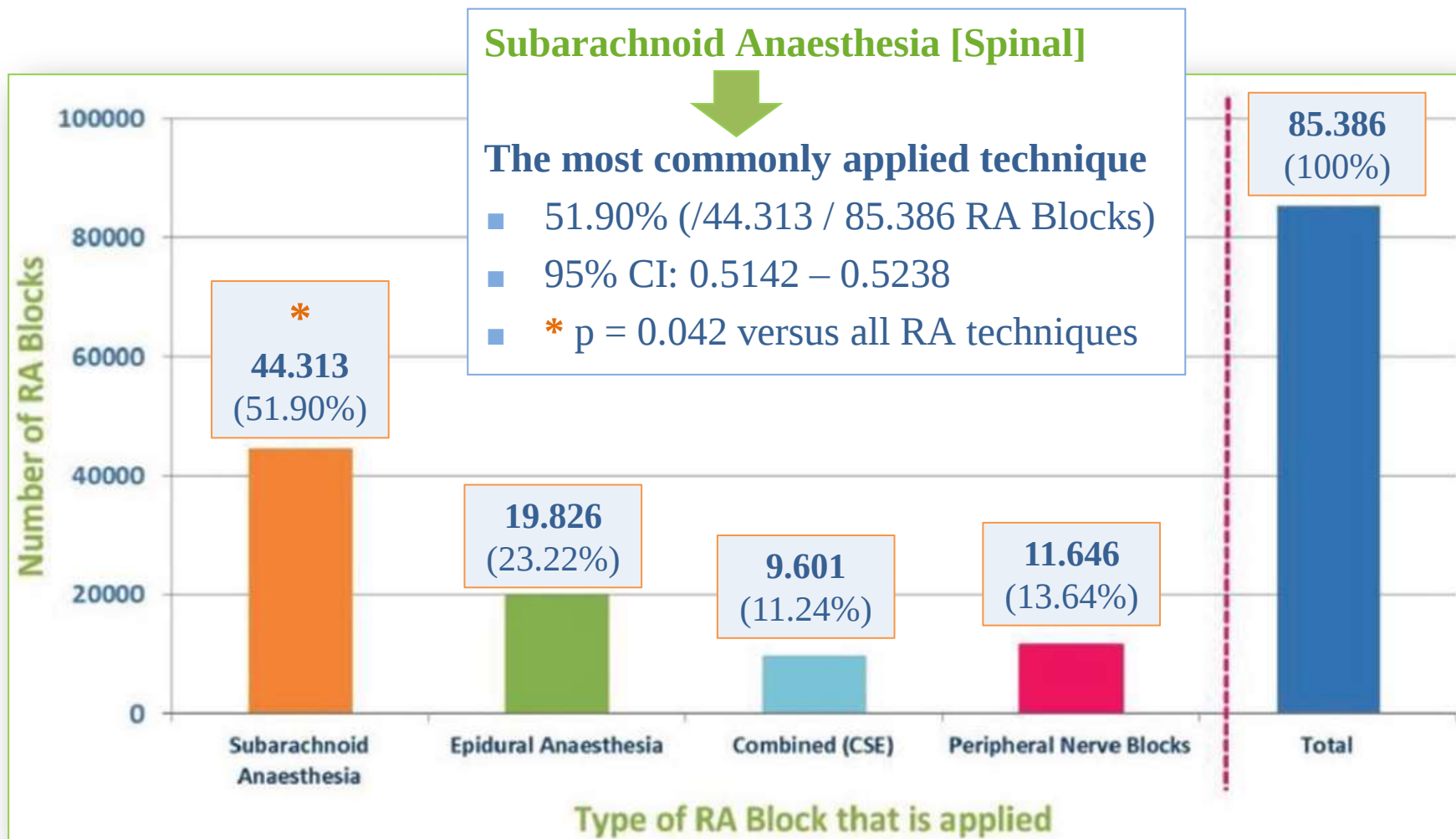
RA Application Rates in Greece (2011)



Applied in almost ½ of operations

- 45.8% (85.386 / 187.703)
- 95% CI: 0.4519 – 0.4581

Distribution of Applied RA Techniques



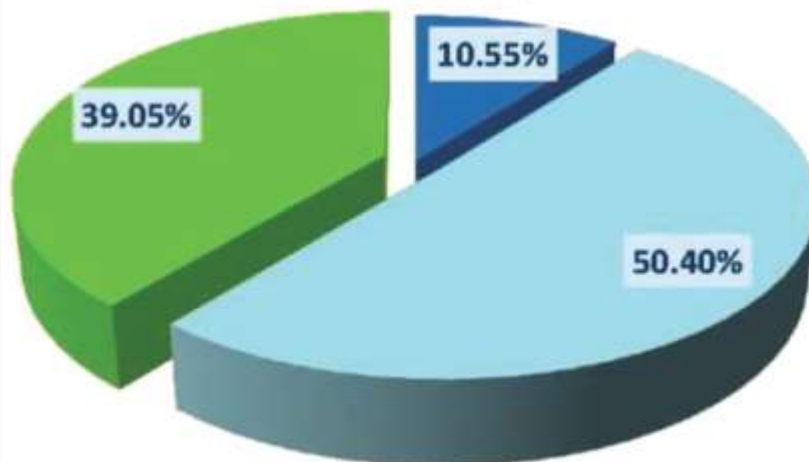
Regional Anaesthesia & Types of Surgery

Subarachnoid Anaesthesia



44.313 Surgical Procedures
mostly instituted in
Orthopaedic Surgery

Epidural Anaesthesia



19.826 Surgical Procedures
more often applied in
Obstetrics & Gynaecology

RA & Caesarean Section

- **Central Institutions of the Capital (Athens)**

most commonly



EPIDURAL & CSE → 50.3%

- **Hospitals of Periphery in Greece
(County – Regional Institutions)**

most commonly → Single Shot Spinals



SUBARACHNOID → 64.9 – 90.1%



Peripheral Nerve Blocks (PNBs) in Greece

- applied in 11.646 operations
13.64% over 85.386 RA Blocks
- mostly for Orthopaedic Surgery
 - Upper Limb Surgery (41.3%)
 - Lower Limb Surgery (50.7%)
- Aim → Anaesthesia & Postop Analgesia
- Peripheral Nerve Catheters → **uncommon**
 - 284 cases – 2.4% of PNBs
- if Placed: maintained for 48 – 72 hours



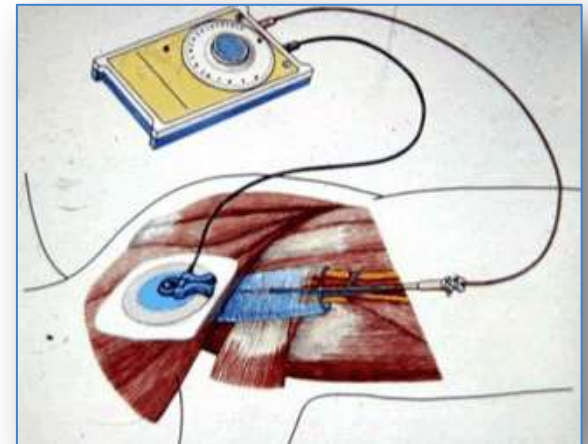
70.2% PNBs → Hospitals of the Capital
29.8% PNBs → Peripheral – County Hospitals



p = 0.019

Selected Technique for PNBs Application

- Neurostimulator – NS (78.5%)
- Ultrasounds – US (1.5%)
- Combination of NS – US (3.5%)
- Anatomic Structures/Landmarks Identification (90.5%)
- Paraesthesia (16%)



Ultrasound Use still very limited in Greece !!!

Familiarity of Anaesthesiologists with RA

- 345 Greek Anaesthesiologists



- Familiarity with RA Techniques

- CNBs → Broad (94.49%)
- PNBs → Limited (46.38%)



PNBs Application Hindering Factors

- Lack of Necessary Equipment (58.23%)
- Inadequate Training (49.29%)



Conclusions I.

- **Survey – Based Study / 1st Attempt to collect data**
 - **Census Report of RA Application in Greece in 2011**
 - identification of strengths & deficiencies
 - material for further analysis / future comparisons
- **RA Utilization: 45% of all operations**
 - % in other countries: great variation (46.3 – 71.4%)
- **RA techniques used on a regular basis**
 - CNBs more often versus PNBs
- **Selection of RA Technique**
 - type of surgery
 - experience – training/equipment availability
 - situation of hospital (centre or periphery)



Conclusions II.

■ Greek Anaesthesiology Community



should intensify efforts towards



- equipment technology finance
- continuous education programs
- organization of RA training / courses especially in rural areas
- incorporation of RA curriculum in training programs
- ideally, unification of education / training across Europe



Future Directions

SUGGESTIONS – NECESSITY FOR

- detailed & concise Questionnaires
- RA Application Registries
 - collaborative networks
 - prospective data collection
 - research, education, training
 - quality improvement



- Pan – European Survey ???
- RA Complications Registry ???
under ESRA Auspices





European Society of Regional Anaesthesia
HELLAS

thank you!