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SPECIAL ARTICLE

Public awareness and service provision for stroke in Northern Greece

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ABSTRACT

Stroke care comes increasingly difficult where there is austerity due to poor resource allocation and the demanding nature of the condition itself. This places special demands for updated clinical excellence and optimum organisation of scarce care services.

Stroke remains a leading cause of mortality, as well as of subsequent serious long-term physical and mental morbidity. Thus, many western countries have developed and implemented public informative strategies. This cannot be easily 'translated' in Greece due to special features on the hospital administration system such as a unique rotation system for acute admissions.

New policy decisions are needed to improve stroke services but these are deferred due to lack of funding and the technical knowhow required.

Currently, Greece is not in a position to host a sophisticated Comprehensive Stroke Center, offering the highest level of specialized stroke prevention and stroke care. Yet, by creating short-term solutions as in the case of stroke bays, local experts would be able to provide the highest level of care from the second the patient is admitted to the emergency room through to his/her stroke recovery.

Still, despite the adverse conditions, clinicians within the Greek health care system have been exceeding themselves in their attempt to provide optimum care outcomes.

Keywords: Stroke care, stroke units, nursing, austerity.

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ΕΙΔΙΚΟ ΑΡΘΡΟ

Ευαισθητοποίηση του κοινού και παροχή υπηρεσιών για εγκεφαλικό επεισόδιο στη Βόρεια Ελλάδα

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ΠΕΡΙΛΗΨΗ

Η φροντίδα του αγγειακού εγκεφαλικού επεισοδίου γίνεται όλο και πιο δύσκολη όταν υπάρχει λιτότητα λόγω της κακής κατανομής των πόρων και της απαιτητικής φύσης της ίδιας της νόσου. Αυτό θέτει ιδιαίτερες απαιτήσεις για την επικαιροποίηση της κλινικής αριστείας και τη βέλτιστη οργάνωση των υπηρεσιών υγείας φροντίδας.

Το αγγειακό εγκεφαλικό επεισόδιο παραμένει κύριο αίτιο θνησιμότητας καθώς και σοβαρή αιτία μακροχρόνια σωματική και ψυχική νοσηρότητα. Έτσι, πολλές δυτικές χώρες έχουν αναπτύξει και εφαρμόσει δημόσιες ενημερωτικές στρατηγικές. Αυτό δεν μπορεί εύκολα να «μεταφραστεί» στην Ελλάδα λόγω των ιδιαίτερων χαρακτηριστικών του συστήματος διαχείρισης νοσοκομείων, όπως το σύστημα εφημεριών για οξείες εισαγωγές.

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Αν και απαιτούνται νέες πολιτικές για τη βελτίωση των υπηρεσιών φροντίδας του αγγειακού εγκεφαλικού επεισοδίου αλλά αυτές αναβάλλονται λόγω έλλειψης χρηματοδότησης και τεχνικής τεχνογνωσίας.
Επί του παρόντος, η Ελλάδα δεν είναι σε θέση να λειτουργήσει ένα Ολοκληρωμένο Κέντρο Αγγειακών Εγκεφαλικών Επεισοδίων το οποίο θα μπορεί να προσφέρει το υψηλότερο επίπεδο εξειδικευμένης πρόληψης και περίθαλψης. Παρόλα αυτά, με τη δημιουργία βραχυπρόθεσμων λύσεων όπως στην περίπτωση των επιμέρους μονάδων εγκεφαλικού επεισοδίου, οι τοπικοί εμπειρογνώμονες θα είναι σε θέση να παρέχουν το υψηλότερο επίπεδο φροντίδας από την εισαγωγή του ασθενή στα επείγοντα έως την αποκατάσταση του.
Παρόλα αυτά και παρά τις αντίξοες συνθήκες, οι εργαζόμενοι στο ελληνικό σύστημα υγειονομικής περίθαλψης, καθημερινώς ξεπερνούν εαυτούς σε μια προσπάθειά να παρέχουν βέλτιστα αποτελέσματα φροντίδας.

Λέξεις Κλειδιά: Φροντίδα εγκεφαλικού επεισοδίου, μονάδες εγκεφαλικού επεισοδίου, νοσηλεία, λιτότητα.

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INTRODUCTION

The degree of acute stroke awareness in Northern Greece was concisely revealed in a letter in the International Journal of Stroke by Hatzitolios et al., 2014.[1] The authors showed that although approximately one third of the sample population would correctly identify at least one major stroke symptom, nearly all reported they would take swift action and transfer the patient to the nearest hospital either by ambulance or private means despite almost a quarter of the respondents being unaware of any stroke symptoms. Thus, the authors confirmed the pressing need for campaigns to educate the public on stroke symptoms and risk factors.

Public awareness interventions such as the Face Arm Speech Time (FAST) campaign (*where the public was educated on the warning signs of a stroke, plus the need to go to hospital for urgent treatment*) in the UK showed a notable decrease in pre-hospital delays, providing the potential to improve stroke outcome.[2,3] Despite considerable efforts to educate the public in the USA, knowledge of stroke warning signs slightly improved over the past decades as those able to name 3 warning signs improved from 5% in 1995 to 16% in 2005.[4] Furthermore, public awareness messages in the future should not focus only on stroke warning signs but on risk factors and more importantly on the availability of urgent treatments for stroke. Still, such treatments require specialized clinical environments.[5]

In contemporary Greece, there is an increase in stroke mortality rates which highlights an urgent need for immediate diagnosis and prompt treatment, as well as, the need to implement effective stroke prevention strategies.[6,7] Yet, with the reality of Greece's long-standing financial crisis which has been reported to exhaust its health care resources including medication and other essential clinical supplies, health care professionals not only have to face patients' extreme conditions but also their own personal hardships and

still remain dignified professionals.[8,9] Indeed, it is recognised that within the context of extreme environments, patients with serious acute conditions or severe chronic disease are at risk of receiving 'therapeutic nihilism' as a result of a 'rationalized' resource allocation.[10,11]

Furthermore, Greek Health Care Professionals (HCPs) are proving to be quite effective in everyday clinical practice, remaining motivated despite difficult austerity circumstances.[12] In order to achieve this state of affairs, traditional values such as 'filotimo' (*φιλότιμο*=literally love for honor) and 'nuclear family' are now reinforced and mobilized both in and out of the hospital settings. Although 'filotimo' cannot be taught easily and is not translatable, its essence entails virtues such as personal pride, dignity, courage, duty, sacrifice and above all respect for others. Still, despite all the virtues associated with it, 'filotimo', as practiced at large by HCPs particularly in recent years in order to sustain the Greek NHS, is not enough on its own when dealing with the severely ill such as stroke patients. Thus, reliance on 'filotimo' cannot sustain the Greek NHS especially as burnout is rising amongst HCPs.[13,14]

Stroke care delivery and access variations in Greece

Greece has a population of approximately 11 million and is divided in 9 regions and 51 prefectures and has approximately 160 public hospitals. Stroke care in Greece today is diverse, usually based on an arbitrary patient age limit of 65 years whereby patients with suspected stroke entering the hospital's Emergency Department are routinely assigned to ordinary neurological (patient age <65) or medical wards (patient age >65). Also, there are six public centres for stroke care, covering parts of the country from North to South, namely in Alexandroupoli, Thessaloniki, Ioannina, Larissa, and Athens. These centres generally have a high level of infrastructure and resources including 24 hour CT/MRI/MRA and angio suite availability plus a 24/7 on-call stroke neurologist and/or neurosonologist. In all cases, acute ischemic stroke patients within these units are also candidates for intravenous thrombolysis for their condition.

Some attempts have been made to reach a degree of specialisation in small stroke units, i.e. Stroke Bays (SBs) within a neurology or medical ward. These are small quasi-stroke unit settings of 3-6 beds, being an integrated part of a neurology or medical ward usually situated at their entrance. Although resembling stroke units and are often referred to as such, they do not always meet the majority of the key stroke-unit features as described above. The main shortcomings are

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lack of dedicated inter-professional staffing, avoidance of bed confinement or regular programmes of staff education and training.

Yet, there are six important public centres for advanced stroke care in Greece. Apart from the capital (Athens) and co-capital (Thessaloniki), where there is rotation system, the other three are regional referral centres where patients have 24/7 access.

The two SBs to date in the Central Macedonia region of Northern Greece are situated in the co-capital Thessaloniki which is served by eight hospitals for its population of approximately 1.3 million. Yet, the city inhabitants themselves are not guaranteed access to specialized stroke services due to a unique Greek centralized hospital rotation system whereby pairs of hospitals are on call for consecutive 24 hour periods. This is the result of a long-standing centralized infrastructure of the Greek health care system in combination with an imbalance of tertiary versus primary care, only to be made worse due to a longstanding recession. In this context, a unique-to-Greece rotation system for hospital emergencies evolved, whereby hospitals take turns to be on 24-hour duty for new admissions while the rest of the city hospitals' A&Es are idle, offering only continuing care to in-patients.

This arrangement creates numerous logistic problems as a hospital may have to face pressure on bed availability and other resources, resulting often in early discharges in order to free beds in anticipation of an influx with the next rotation on-call period. Even, worse, it might be that none of the two SBs in the city is on call and therefore access to specialized stroke treatment is impossible for that particular day-period.[10] Similarly, in the capital of Athens (4,5 million), the rotation system dictates that the only SB is available for admission only once a week. Hence, the majority of stroke patients in the two major cities are still admitted to ordinary neurology or medical wards.

In contrast, the SBs in the smaller cities of Alexandroupoli (58,000 population), Ioannina (65,500) and Larissa (285,000) are open 24/7, as they the only hospitals being in the capitals of the corresponding prefectures. Although it would appear that in terms of stroke provision in Greece, it is better to live in small cities, at least in one that has a SB, one should remember that these cities are serving a wide regional area (Thrace, Epirus and Thessaly, correspondingly) where access to these cities can be troublesome.

Thus, although there is some stroke infrastructure of good quality in Greece, central policies which define ward allocation by age in combination with the rotation system for hospital admission, seriously obstructs seamless patient oriented care. The small pockets of clinical excellence are subsequently 'lost' in a hectic health care

delivery environment whereby expertise is not fully exploited.

If the rotation system is to prevail in the two major Greek cities, i.e. Athens and Thessaloniki, (accounting for half the country's population) one pragmatic solution would be to set up a comprehensive stroke centre in each, independent of the rotation system, whereby constant specialised stroke care could be made available 24/7 and equally accessible to all. As for the rest of the country, a small SB (attached to a neurology or medical ward) should be available in all of the remaining 49 prefectural capital hospitals. This paradigm of care distribution coupled with tele-stroke services as developed and implements in the US optimizes available resources and expertise while widely improving patient outcomes.[15]

Nursing input in stroke care

It should also be noted that specialized nursing skills are of paramount importance in the acute stages of stroke as targeted nursing interventions and nursing monitoring contributes essentially to patient progress. Until one gets a structural change in the system, a great responsibility rests on the professional development of all nurses concerning recognition of symptoms, urgent need for hospitalization and simple immediate measure that can be taken to minimise the extent of the initial post stroke effects.

Complementary qualitative results from a recently published PhD thesis on contemporary stroke care in Greece with 164 stroke patients (43% female) with a mean age 67 years and one week average length of stay (range 1-26 days) in all types of wards involved, showed that health care professionals engaged in stroke care dislike the rotation system and the age discrimination for ward allocation as new therapeutic interventions and expert care in the two specialized Greek SBs can achieve better outcomes, yet many citizens miss this opportunity.[16]

From a philological point of view, one could paraphrase the famous Shakespearean quote as: "To know or not to know?" meaning that recognizing symptoms is not enough for stroke. Acting promptly in combination with a 24/7 specialized service provision (unlike the current haphazard system) is everything when fighting the contemporary 'stroke epidemic' due to the rising numbers of elderly in combination with austerity measures hitting the Greek health care system.[17,18] This dismal picture is not unique for Greece as many countries especially in Southern Europe and beyond face similar challenges, thus, an international dialogue on tackling these issues would be beneficial for all parties involved.[19-21]

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Policy implications for stroke provision

Stroke units are relatively rare within a worldwide perspective, despite sound evidence of effectiveness. However, in Greece it was found that a simple quasi-stroke unit setting, that is, a SB as described in this paper may provide effective treatments for younger stroke victims mainly due to early interventions, careful monitoring and improved staff morale and thus could be implemented more extensively not only in Greece but in certain geographical regions of the world where health-care resources are scarce until more sophisticated stroke units can be budgeted and fully implemented.

Although the need for centralized and comprehensive stroke centers, as currently running in many advanced western world health care systems, is indisputable, additional awareness is needed among health-service researchers and policy–makers to ensure that stroke protocols and learning resources are available worldwide. These can be implemented not only in a proper stroke unit but in lower cost setting alternatives as well.

As presented earlier, Greek city hospital rotation systems are used for emergency and scheduled admissions. Thessaloniki has eight state general hospitals with a total of approximately 4,000 beds. Four of these are major general hospitals (500-750 beds), only one of which is a university hospital; three are also general but smaller with approximately 200-300 beds each; there are also other specialized hospitals (cancer, skin, contagious disease and psychiatry). All of the general hospitals are on a 24 hour on-call rotation system, always in pairs, about once a week. By law, A&E is not permitted to admit cases when not on-call, unless a major event takes place right outside the premises. In such a case, the hospital staff is obliged to offer first aid then to make sure the patient is transferred to the on-call hospital. However, as mentioned before, only two hospitals have a SB where services and more sophisticated treatment is offered but this is available only when these particular hospitals have their turn to be on-call.

Generally, for stroke patients, if they were to enter one of the SBs, this opportunity could only arise if the patient resides in or near one of the two cities (i.e. the capital-Athens or second capital-Thessaloniki) with these facilities and if by chance the hospital with the SB is on-call for emergency services on that particular day.

Thus the SB being part of a hospital that follows the rotation on-call system is not open even for local new patients on a routine daily basis. Patients arriving for emergency treatment at a hospital which is not open to emergencies are redirected to the rotation allocated hospital regardless of the

seriousness of the condition. For stroke patients this can cause unnecessary and unwanted delays for treatment which may affect outcomes as valuable time is lost.

With only few SBs in Greece, which are also restricted by hospital rotation systems, almost all patients admitted for stroke are placed in neurology or medical wards throughout the country. Thus, stroke patients admitted to an SB may be relocated to Neurology or Medical Ward once the seriousness of their condition has improved or stabilized or if the next rotation system day dictates that a more urgent new patient case needs priority.

This is made worse due to the long standing austerity prevalent throughout Greece, where hospitals are stretched for service provision by masses wanting emergency services. It is therefore unlikely that more SBs will be introduced to serve the whole population 24/7. Thus, restricted access to the hospitals with stroke bays will possibly remain limited to approximately once weekly in both cities where these are situated and not at all for all other cities in the country.

This trend has to change, as advanced stroke care is an equal right for all Greek citizens. Furthermore, when the public is being educated on recognizing stroke symptoms and signs, this should 'pay-off' by swift admittance to appropriate medical facilities such as a stroke unit or in the case of Greece, a stroke bay. However, with the current rotation system in place, in most cases, this privilege is denied in practice, unless one "*times his/her stroke, to coincide with the appropriate specialist hospital being on-call accordingly*!" Thus a new policy implementation for acute specialized stroke care provision is urgently needed for Greece although this would be difficult within the current austerity environment. However, although a stroke bay has its own fundamental limitations, it is certainly better than no access to specialized services.

In the light of the severe financial restraints in Greece, the best short term solution would be to encourage stroke specialists to run stroke bays at one end of their neurology or medical wards in all of a country's hospitals, as first introduced in Thessaloniki by Dr Rudolf Jobst and later by Prof. Apostolos Hatzitolios, accordingly. This realistic and pragmatic approach could serve the country's future stroke population with improved outcomes and greater independence for survivors with minimum burden on health care resources. Furthermore, such a suggestion may not need giant steps involving huge policy change which might have been centralised and slow to implement. In addition to medical expertise being used wisely as per the configuration above, nurse expertise could be gleaned from specialist nurses working already in these innovative pockets of care excellence. By the

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same token, other specialized HCPs such as physiotherapists, speech and occupational therapists and other specialists, could also join these units and subsequently true interdisciplinary stroke teams could be fully operational within the Greek NHS in a relatively short period of time.

CONCLUSIONS

Currently, Greece is not in a position to host a sophisticated Comprehensive Stroke Center, offering the highest level of specialized stroke prevention and stroke care. Yet, by creating short-term solutions as in the case of stroke bays, local experts would be able to provide the highest level of care from the second the patient is admitted to the emergency room through to his/her stroke recovery.

Thus, educating the public on stroke symptoms and signs would actually pay-off as facilities could meet expectations and therefore patients would be receiving a rapid response and coordinated care 24/7 for their stroke event.Only then, could effective public campaigns for stroke education be implemented. These should contain messages specifically targeted to populations who have a higher stroke risk and/or a significant lack of awareness of specialized treatments such as clot busting therapies which need to be administered early within the first hours from onset.

Such knowledge made public, may motivate the population to translate their understanding into swift action and present for appropriate medical attention more quickly. Thus, more lives could be saved and less disability may occur with lower infliction on families and society as a whole.

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