The 2nd ESSD congress and was opened by Dr. Pere Clavé, president of the ESSD, and chair of the local organising committee. He extended a warm welcome to delegates, who came from all over world to attend, in Barcelona, a city of culture and science. The theme was “Uniting Europe against Dysphagia” and fittingly, the congress emphasised a multidisciplinary approach to dysphagia research and management, providing a forum for delegates from all professional backgrounds to share their work.

On the 25th of October, a comprehensive pre-congress course covering the prevalence, pathophysiology and treatment of oropharyngeal dysphagia in stroke took place. Over the next two days (26th/27th October) of the congress, the scientific programme covered a broad spectrum of topics, such as standardisation of screening and assessment, diagnostic methods, rehabilitation, education, nutrition in dysphagia and respiratory complications of dysphagia. There was also an emphasis on the drafting of position statements, in order to help establish best clinical practice in dysphagia management in different clinical populations. Overall, the quality of both the oral presentations and the posters were outstanding, and there was an excellent level of representation from Irish researchers.

It was also a great opportunity for clinicians to sample some of the new dysphagia products from the sponsors of the congress, such as Nutilis Clear.

Due to the volume of work that was presented at the congress, it is not feasible to review every presentation. The following provides a selection of research which reflects a variety of topics over the three days.

**Dysphagia Management in Stroke:**

Dr. Rosemary Martino, from the University of Toronto presented on initial assessment in stroke from a dysphagia perspective. She emphasised the importance of early identification of dysphagia in order to prevent secondary health complications such as pneumonia, malnutrition and even death, while at the same time promoting earlier overall recovery.
She has developed the Toronto Bedside Swallowing Screening Test (TOR-BSST). Using this tool, stroke patients can be screened for the presence of swallowing difficulties within 24 hours of acute hospital admission. The TOR-BSST has been validated for use among stroke patients, and she has studied its implementation at 14 community hospitals and 2 long-term care facilities.

Dr. Martino is currently working on validating the TOR-BSST among critically ill patients who have been intubated for 48 hours or longer. The TOR-BSST takes no longer than 10 minutes to administer, score and place in a patient's medical chart. Screeners may be healthcare professionals from a variety of disciplines (for example, nursing, dietician, occupational therapy, etc.) although they must be fully trained on a 4-hour training program by an expert trainer who in turn will have received specialist guidance in using the tool. The TOR-BSST comprises of three sections – two brief oral exams and one section on water swallowing. Page two contains standardized instructions for the administration of the tool. Failure on any item means that the screen is discontinued and prompts referral to the SLT for full dysphagia assessment.

Dr. Rainer Dziewas, a Neurologist from University Hospital Münster, in Germany spoke in depth on the use of FEES early on in the management of dysphagia in acute stroke. He said that this examination should help identify at-risk patients, grade severity of dysphagia and to guide rehabilitation from the outset. The benefits of this procedure are that it can be performed at the bedside and is generally considered to be non-invasive and therefore frequently repeatable. As FEES is usually only used by experienced clinicians, Dr. Dziewas investigated whether a FEES-based dysphagia score for acute stroke patients could be adopted successfully by doctors with no previous experience of FEES after a single short training session. Seventeen neurologists took part in the study. None of the participants had prior experience with FEES. Participants were asked to rate archived video footage of FEES examinations on a simplified 5-point scale. The results of the study showed that 88.8% of video sequences were assessed correctly. There was also a high level of interrater agreement between the participants. It is hoped that the results of this study will help inform how clinicians are educated in the use of FEES in the future. Dr. Dziewas also commented on a 2009 study that looked at the safety of FEES in Acute Stroke Patients. A prospective study of FEES-associated complications was carried out in 300 acute stroke patients over a 1-year period. A neurologist and an SLT on the stroke team performed FEES within a mean time interval of 1.9-0.8 days after onset of stroke. Cardiovascular parameters were closely measured during each exam, and a discomfort rating was obtained from the patients. None of the 300 participants experienced any airway difficulties, decrease in level of consciousness, symptomatic bradycardia/ tachycardia, laryngospasm, or epistaxis requiring special treatment was observed. There was a reported incidence of nosebleeds in 6% but these were self-limiting and did not significantly differ in relation to major stroke types (e.g. ischemic versus haemorrhagic). While there were some observed changes in systolic blood pressure, heart rate, and oxygen saturation, these alterations did not cause any severe adverse event
and were clinically judged as being mild. The patient rating of comfort indicated that FEES was tolerated “excellently” in 80% of patients. Dr. Dziewas emphasised that these results show that the use of FEES early on in acute stroke is safe, and does not usually cause excessive discomfort.

“Carbonated liquids as a compensatory strategy for people with dysphagia post-stroke” was presented by Georgia Tegou, Trinity College Dublin. Following on from research that suggests that manipulation of bolus characteristics such as carbonation, can improve swallowing efficiency and even reduce the risk of aspiration in people with dysphagia following stroke, this study aimed not only to explore the effects of carbonated thin liquids (CTL) on people with delayed swallow post stroke, but also to examine patients’ compliance with carbonated thin liquids when they were recommended. Fifteen participants with delayed initiation of swallow and dysphagia post stroke were assessed using videofluoroscopy on 5ml, 10ml and 25ml swallows of non-carbonated thin liquids (NCTL) and carbonated thin liquids (CTL). The outcome measures used were penetration-aspiration, bolus clearance, initiation of pharyngeal swallow, oral transit time, pharyngeal transit time, stage transition duration and laryngeal closure duration. A questionnaire was used to gather the views of participants who were subsequently recommended to take carbonated thin liquids. A statistically significant improvement for penetration-aspiration scores on CTL was found for 5ml and 10ml boluses. Faster initiation of pharyngeal swallow was observed for 5ml CTL with an overall trend of improvement in temporal measures. Despite a low response rate to the questionnaire, results indicated a positive attitude toward carbonated fluid intake. This research provides interesting insights into the effects of carbonated drinks on the swallow response, and could therefore help guide clinicians in using carbonated fluids to compensate for swallowing deficits in people post stroke.

**Dysphagia in Parkinson’s Disease**

Dr. Hanneke Kalf, from Radboud University Nijmegen Medical Centre, in the Netherlands spoke on the topic of “Drooling & Dysphagia in Parkinson’s Disease”.

Dr. Kalf reported that there are 1.2 people with Parkinson's disease in Europe. The mean age for diagnosis of PD is 65, although there is huge variation in this, and in some atypical types of PD onset can be seen before the age of 40 years old. According to Dr. Kalf, saliva production is normal in people with PD, although people with PD often complain of excess saliva and poor saliva control. Poor saliva management is common in individuals where there is an involuntary open mouth posture – this is normally associated with greater disease severity, and a stooped posture. Swallowing difficulties are recognised as a factor in poor saliva management, however, Dr. Kalf emphasised that except in severe dysphagia, lack of saliva control can only partially be attributed to dysphagia. The issue appears be more closely related to a lower than normal rate of saliva swallowing rather than dysphagia.
Dr. Kalf reported on a study which used surface EMG to compare rates of swallowing in people with poor saliva control, to those without impairment. However, when monitored, patients appear to compensate by increasing their swallowing frequency, much like the use of conscious strategies that people with PD can use to compensate for difficulty walking. Hopefully these findings can be used by SLTs to help develop behavioural approaches to saliva management.

Christoph Lueking, a researcher from Munich, reported on “**Unexpected epiglottical movements in patients with Parkinsonian syndromes**”. The researchers used Flexible endoscopic evaluation of swallowing (FEES) to evaluate swallowing in patients with idiopathic Parkinson’s disease and different forms of atypical Parkinsonism. They paid particular attention to the movements of the epiglottis.

The team observed 25 patients with prolonged epiglottic closure (remaining in the inverted position for up to 5 seconds). Some patients also showed epiglottic tremor, freezing (unable to trigger another swallow for up to 10 seconds) or repeated, short-lasting, spontaneous downfolding of the epiglottis independent of swallowing which they termed “floppy epiglottis”. Interestingly, similar changes were observed in some stroke patients with basal ganglia involvement, especially bilaterally, but not in other conditions. The researchers postulated that this prolonged closure of the epiglottis might be a reason for the dyspnoea experienced by some patients while swallowing and this may be an important issue for clinicians to be aware of while assessing dysphagia in this group. Possible explanations for these symptoms might be muscle rigidity, bradykinesia and poor coordination, or a combination of all of the above, due to underlying pathology in the brainstem-basal ganglia network.

“**Cortical swallowing activation in dysphagic versus non-dysphagic patients with Parkinson’s disease**” was presented by Sonja Suntrup, from University of Muenster, Germany.

Brain imaging studies indicate cortical compensation of dysphagia in stroke; however this idea has not been fully explored in Parkinson’s disease (PD). The researchers examined different patterns of cortical swallowing processing in PD patients with and without dysphagia. Brain activity was measured using whole-head magnetoencephalography (MEG) in 20 patients with PD (10 with and 10 without manifest dysphagia) and an age-matched control group of 10 healthy subjects. Swallowing function was assessed using FEES, a 150 ml water swallowing test and two swallowing questionnaires (SDQ, SWAL-QUOL). In comparison to healthy subjects, all PD patients showed a reduction in cortical swallowing activation – this was most obvious in patients who had been diagnosed with dysphagia. Comparing the two patient groups, those without manifest dysphagia showed significantly stronger activation in more lateral parts of the pre-motor cortex. This indicates that in PD, not only brain stem and basal ganglia circuits, but also cortical areas play a role in modulating swallowing function. Recent literature on PD indicates that there is a switch from the use of defective frontal circuits towards relatively intact
parietal-lateral pre-motor circuits to facilitate movement performance. Therefore, the researchers postulate that increased activation of the lateral pre-motor cortex in non-dysphagic patients may be a compensatory mechanism that preserves swallowing function. The theory is that, as PD progresses and increasingly affects cortical areas, including this compensatory pathway, dysphagia becomes more severe.

**Dysphagia Management in Head & Neck Cancer**

Georges Lawson, an ENT Surgeon from Belgium, presented on the use of FEES to improve swallowing restoration following trans-oral robotic surgery for supraglottic laryngectomy (tors-sl).

Trans-oral robotic surgery is considered to a minimally invasive technique in comparison to traditional “open neck” approaches to head and neck surgery. This study analysed rehabilitation of swallow function and patient outcomes following trans-oral robotic supraglottic laryngectomy, using FEES to monitor and facilitate patients’ progress through their treatment plan.

The research team reviewed the patient records for patients receiving TORS-SL for squamous cell carcinoma (SCC) who were at least 6-months post surgery for this study. Postoperatively, swallow function was assessed on day one with fiberoptic endoscopic evaluation of swallowing (FEES). Patients without gross aspiration on FEES are then referred for modified barium swallow study (MBSS). FEES & MBSS were used to objectively assess swallow and inform management techniques such as compensatory postures, bolus consistencies, and rehabilitation. Mr. Lawson advocated the aggressive use of both FEES and MBSS in order help patients return to oral intake as quickly as possible, transitioning from modified consistency diet and thickened fluids to eventually manage thin liquids and solids. 18 patients were studied post supraglottic laryngectomy using TORS. Overall, patients required between 2–29 days for return of safe swallow for solids (the median was 4.5 days). Patients required between 2–45 days for return of safe swallow for thin liquids (the median was 5.5 days). Factors reported to be associated with more significant delays in return of swallow function were: female gender, advanced pathologic tumour staging (such as III/IV), simultaneous neck dissection, and temporary postoperative vocal fold paresis or paralysis.

Mr. Lawson concluded that using FEES & MBSS early on to objectively assess dysphagia and select rehabilitation techniques helps to improve the quality of patient care in the context of minimally invasive surgery. He acknowledged that larger studies are needed to ensure greater validity of data.

“**Tongue base strength changes contribute to post-laryngectomy dysphagia**” was presented by Athanasia Printza from the Aristotle University of Thessaloniki, Greece. The aim of this study was to measure tongue strength and endurance in post-laryngectomy patients, as many of these
patients experience difficulties with solid foods and a sensation of pharyngeal residue.

Post-laryngectomy, anatomic changes are thought to affect tongue base retraction as a result of muscle weakness or decreased range of movement. A cohort of consecutive patients who had completed their treatment 4 months previously participated in the study. There was a control group of healthy, age matched participants. All participants provided a series of tongue strength measurements obtained via a pressure sensor: at the tip of the tongue, at the middle, at the base of tongue while static, during normal swallowing and forceful swallowing. They were also measured using half of their maximum pressure on each parameter for as long as possible (tip, middle and base of tongue) – this was in order to provide a measure of tongue strength endurance.

The results showed that on all measurements, smaller than mean values and a bigger range of values were recorded for the post-laryngectomy group. Statistical significance however, was only noted for strength and endurance at the base of tongue. During effortful swallowing, the mean group values were actually comparable. The data obtained reinforces the idea that total laryngectomy can compromise swallow function through changes to tongue base strength for propulsion of food through the pharynx. These results indicate that swallowing exercises aimed at maximizing tongue base retraction can help patients manage these changes.

**International Dysphagia Diet Standardisation Initiative**

The use of standardised descriptors for thickened fluids and modified diets varies widely from country to country. While some countries, such as Ireland, Australia and Canada, have developed their own nationally recognised descriptors, there are no internationally standardised descriptors for food and fluids consistencies used in the management of dysphagia.

Peter Lam, a Dietician who has already worked as project lead for the Canadian dysphagia standards, discussed an international programme commencing in 2012 to develop consensus recommendations for modified foods and fluids, through a team made up of experts from all over the world. The rationale for such a large scale project is to improve patient safety and health outcomes through better communication between professionals, and help produce an internationally recognised terminology which can be used by dysphagia researchers.

Mr. Lam predicted that the completion date for this project would be 2015, as it will take time to collate information and link in with all relevant shareholders. He invited people who wished to become a representative for the project in their health care setting or local area, to get involved by logging on to: [http://www.surveymonkey.com/s/7J5GBH9](http://www.surveymonkey.com/s/7J5GBH9)
Other Notable Presentations:

Dr. Julie Cichero (University of Queensland, Australia) presented the results of a study which explored some of the reasons why healthy adults experience difficulties swallowing medications.

153 healthy volunteers took part. Participants were asked to complete a survey that included food-related questions (memory of choking incidents, and willingness to try new foods) and some medication-related questions (regularity of medication use and memory of choking or swallowing problems related to medications).

Assessments of gag reflex, taste receptor density and chewing efficiency were then carried out. Each person was also observed while swallowing a capsule. The results indicated that 33% of participants had difficulties swallowing whole tablets/capsules, with 19% tilting their head back to swallow pills. 26% of the group recalled a choking incident related to food or medicine. 75% of participants used too little water to swallow medication (less than 60mls). Presence or absence of gag reflex was not considered statistically significant in this study. Dr. Cichero also commented that people with difficulties swallowing medications were more likely to attempt to swallow foods without chewing them to a completely uniform consistency – i.e. they were more likely to try to swallow foods containing different sized particles.

This pilot study has determined that many otherwise healthy people find whole tablets and capsules difficult to swallow. The results may help us develop safe compensatory strategies for use with people who have problems swallowing tablets.

Jingming Duan, from University Hospital Zurich, presented on a study which analyzed elderly dysphagia patients with varying aetiologies, and explored the frequency of aspiration in this population.

A retrospective chart review was performed for dysphagia patients older than 75 years seen at the Department of Phoniatriecs and Logopedics at the University Hospital Zurich between October 2008 and November 2011. Data showed that of the 2158 patients seen in the clinic over this period, 312 (15%) of them suffered from dysphagia. Within this group, 71 (23%) patients were older than 75 years. The most frequent aetiology within the elderly group was neurological problems with an incidence of 42%, followed by presbyphagia (31%) and structural problems (27%).

Aspiration was detected in 45% of patients older than 75 years. The incidence of aspiration differed between the etiological groups: neurogenic dysphagia 57%, structural dysphagia 50% and presbyphagia 23%.

45% of dysphagia patients in this study older than 75 years suffered from aspiration, which may indicate aspiration to be an important consideration during the treatment and management of elderly dysphagia patients. Although
aspiration in patients with neurological or structural deficits may be well recognised, the results indicate that more attention may need to be paid to the examination and treatment of aspiration in people with presbyphagia than previously thought.

Shigehiro Fujiwara, representing a research team from Japan, completed a short oral presentation on the study “Tongue pressure production against hard palate during supraglottic swallow and super supraglottic swallow”. Supraglottic swallow (SS) and super supraglottic swallow (SSS) are used in dysphagia management primarily as airway protection techniques. The effect of both techniques on the pharyngeal stage of swallowing have been previously documented, however there is very little literature on the impact of these manoeuvres the oral stage of the swallow. The authors designed this study in order to investigate the influence of SS and SSS on tongue-palate contact by measuring tongue pressure production against hard palate.

Nineteen healthy adults participated. Tongue pressure during swallowing 5 ml water with a normal swallow, SS and SSS was measured by using an ultra-thin tongue pressure sensor sheet with 5 pressure-sensors attached to different points across the hard palate. Maximal magnitude, duration and integrated value of tongue pressure were analyzed based on the tongue pressure waveform obtained.

Maximal magnitude and integrated values during SS were higher at the posterior part of the hard palate than those during normal swallows, and those during SSS were higher at each part of the hard palate than those during normal swallows. Of note, pressures measured during SSS were higher at anterior-median part and posterior circumferential part of the hard palate than those during SS. These results suggest that SS and SSS both facilitate increase tongue-palate contact pressures which in turn might improve bolus driving force in the oral stages of the swallow. Based on data collected, SSS was more effective than SS in this respect.

In summary, the 2012 ESSD congress in Barcelona acted as a forum for both new and experienced researchers to bring up-to-date relevant work to an audience of professionals from diverse backgrounds. Although primarily focusing on European research, the congress was a platform for new developments in dysphagia the world over. No doubt many of these fresh insights will serve to inform dysphagia clinicians’ practice in the years to come.

If anyone would like further information on any of the presentations or would like copies of the abstracts, please feel free to contact Emer Foley at the address below.

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