mechanisms not fully understood. We report a case of combined chorea, optic neuropathy, peripheral neuropathy, and encephalopathy, which highlights the potential for CRMP5 to cause multifocal neurological dysfunction.

**126 QUALITY OF LIFE IN IDIOPATHIC DYSTONIA: A SYSTEMATIC REVIEW**

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**Objective** Dystonia is characterised by sustained muscular contractions frequently producing repetitive and twisting movements. The primary aim of this systematic review was to establish how quality of life (QoL) is affected in idiopathic focal, multifocal and segmental dystonia. This review aimed to evaluate variations in QoL between different subtypes of dystonia, identify the determinants of QoL and assess the effects of different treatments on QoL.

**Methodology** A systematic computer-based literature search was conducted using the PubMed database to search for papers on QoL in idiopathic focal, segmental, multifocal and generalized dystonia. We identified 75 studies meeting our inclusion criteria. Information was extracted regarding prevalence, demographics and response to treatment where indicated.

**Results** This review revealed QoL to be a significant yet overlooked issue in idiopathic dystonia. Data consistently showed that dystonia has a negative effect on QoL in patients compared to healthy controls, when measured using disease specific and generic QoL measures. The majority of studies (n=25) involved patients with cervical dystonia, followed by benign-essential blepharospasm (n=10). Along with the beneficial effect to the dystonia symptoms, treatment using Botulinum Toxin and Deep Brain Stimulation is also effective in improving overall QoL across the majority of subtypes.

**Conclusion** The findings demonstrate that patients’ QoL should routinely be assessed and monitored, as this may affect subsequent management. Further research will allow for more robust management of non-physical impairments.

In 2016 the British Neurotoxin Network (BNN) published recommendations for the management of cervical dystonia patients with poor response to BoNT treatment.

**Aims** To compare management of patients with secondary non responsiveness in two regional neuroscience centres with the BNN guidelines.

**Methods** We retrospectively analysed 68 patients with cervical dystonia who met criteria for secondary non responsiveness to BoNT-A treatment.

**Results** Suboptimal response to BoNT-A was recorded in 37 patients (54%), whilst 31 (46%) had no therapeutic response.

In the ‘suboptimal response’ group, 21 (57%) had a subsequent good therapeutic response with adjustment of dose, muscle selection and injection technique and continued BoNT-A treatment. Of the remainder, 6 (38%) were switched to BoNT-B and 7 (44%) were referred for Deep Brain Stimulation surgery.

In the ‘no response’ group 6 patients (19%) had a good therapeutic response with adjustments of dose, muscle selection and injection technique and continued BoNT-A treatment. In this group 22 patients (71%) were assessed for BoNT-A resistance, which was confirmed in 8 (36%).

**Conclusion** Our audit shows the importance of careful assessment of patients with cervical dystonia presenting with secondary non-responsiveness to BoNT-A therapy. The BNN recommendations provide a useful framework for improving dystonia treatment.

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**127 AUDIT OF POOR RESPONSE TO BOTULINUM TOXIN IN CERVICAL DYSTONIA**

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**Background** Botulinum toxin (BoNT) is an effective first-line treatment for cervical dystonia. However, secondary non responsiveness to BoNT treatment remains a key reason for a discontinuation rate of 20%.

In 2016 the British Neurotoxin Network (BNN) published recommendations for the management of cervical dystonia patients with poor response to BoNT treatment.

**Aims** To compare management of patients with secondary non responsiveness in two regional neuroscience centres with the BNN guidelines.

**Methods** We retrospectively analysed 68 patients with cervical dystonia who met criteria for secondary non responsiveness to BoNT-A treatment.

**Results** Suboptimal response to BoNT-A was recorded in 37 patients (54%), whilst 31 (46%) had no therapeutic response.

In the ‘suboptimal response’ group, 21 (57%) had a subsequent good therapeutic response with adjustment of dose, muscle selection and injection technique and continued BoNT-A treatment. Of the remainder, 6 (38%) were switched to BoNT-B and 7 (44%) were referred for Deep Brain Stimulation surgery.

In the ‘no response’ group 6 patients (19%) had a good therapeutic response with adjustments of dose, muscle selection and injection technique and continued BoNT-A treatment. In this group 22 patients (71%) were assessed for BoNT-A resistance, which was confirmed in 8 (36%).

**Conclusion** Our audit shows the importance of careful assessment of patients with cervical dystonia presenting with secondary non-responsiveness to BoNT-A therapy. The BNN recommendations provide a useful framework for improving dystonia treatment.

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**128 EFFICACY AND SAFETY OF DEEP BRAIN STIMULATION IN PARKINSON’S DISEASE: SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Background** Deep brain stimulation (DBS) is a neurosurgical procedure indicated in patients with advanced Parkinson’s disease (PD). This systematic review and meta-analysis aimed to investigate the efficacy and safety of DBS in comparison to best medical therapy (BMT) in the treatment of PD.

**Methods** A systematic search was performed in Medline, Embase and Central. Randomised controlled trials (RCTs) comparing DBS to BMT in PD patients were included. Outcome measures were impairment/disability (UPDRS), quality of life (PDQ-39), levodopa equivalent dose (LED) and rates of serious adverse events (SAE).

**Results** Eight eligible RCTs (n=1189) were included in the meta-analysis. Regarding efficacy outcomes, there were significant improvements in UPDRS, PDQ-39 and LED in favour of DBS (P<0.00001). The risk of SAE was significantly higher in the DBS group (P=0.005), as was the total number of SAE (P=0.0018).

**Conclusions** Overall, DBS was found superior to BMT at improving impairment/disability, quality of life and reducing medication doses, but these benefits need to be weighed against the higher risk of SAE.