BRAND POSITIONING IN THE PHARMACEUTICAL INDUSTRY

Content analysis applied to antiaging drugs
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Thesis presented to Escola de Administração de Empresas de São Paulo of Fundação Getulio Vargas (FGV/EAESP), as a requirement to obtain the title of Master in International Management (MPGI).

Knowledge Field: Brand Positioning
Advisor: Profº. Benjamin Rosenthal

SÃO PAULO

2017
Brizolla, Natasha.

Brand positioning in the pharmaceutical industry: content analysis applied to antiaging drugs / Natasha Brizolla. - 2017. 89 f.

Orientador: Benjamin Rosenthal

Dissertação (MPGI) - Escola de Administração de Empresas de São Paulo.


CDU 661.12
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Approval Date: _____/_____/_______

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ABSTRACT

Under the shifting dynamics of pharmaceutical industries, companies must be responsive to adjust their strategies to the constantly evolving environment as well as predict future changes to be able to prepare and position their brands in the market to foster a privileged place. The goal of this study is to examine brand positioning strategies of age-related neurodegenerative drugs through content analysis in order to provide an overview of the pharmaceutical industry strategic approach regarding marketing and communication initiatives. This research adopted a descriptive qualitative methodology and begun by exploring concepts and theories regarding brand positioning and its application in the industry at hand. Then data was collected and examined under the Costumer-Driven Positioning framework from Vanderveer & Pines (2007) that focuses on physicians and message construction according to five rubrics: problem statement, functional benefits, main theme, emotional benefits, and reasons to believe. This research assessed each rubric of the CDP model and applied them for the eight brands embracing three major disease groups: Alzheimer, Parkinson, and Amyotropic Lateral Sclerosis. Suggestions of additional elements to be incorporated as well as limitations to be further investigated were discussed at last.

Keywords: pharmaceutical industry, age-related conditions, neurodegenerative diseases, brand positioning
RESUMO

Para alinharem-se às mudanças de dinâmica das indústrias farmacêuticas, as empresas precisam ser ágeis para ajustar suas estratégias ao ambiente constantemente em desenvolvimento assim como prever mudanças que estão por vir para posicionar suas marcas no mercado adequadamente a fim de alcançarem uma posição privilegiada. O objetivo deste trabalho é propor uma análise das estratégias de posicionamento de marca para doenças neurodegenerativas advindas do envelhecimento através de análise de conteúdo a fim de proporcionar uma visão geral da abordagem estratégica da indústria farmacêutica em relação às iniciativas de comunicação e marketing. Essa pesquisa adotou uma metodologia qualitativa e descritiva começando por explorar conceitos e teorias a respeito de posicionamento de marca e suas aplicações na indústria em questão. Em seguida, os dados foram coletados e analisados sob o prisma da abordagem de posicionamento de Vanderveer & Pines (2007) (Costumer-Driven Positioning) centrado no público médico e na construção da mensagem de acordo com cinco rubricas: descrição do problema, benefícios funcionais, tema principal, benefícios emocionais e motivos para acreditar. Esse estudo considerou cada rubrica do modelo de posicionamento (CDP) e as aplicou para oito marcas abarcadas nos três grupos de doenças: Alzheimer, Parkinson e Esclerose Lateral Amiotrófica. Por fim foram discutidas sugestões para incorporar elementos adicionais assim como limitações para serem aprofundadas em pesquisas futuras.

Palavras-chave: indústria farmacêutica, patologias associadas ao envelhecimento, doenças neurodegenerativas, posicionamento de marca
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List of Acronyms

OTC  Over-the-Counter Drugs
DTC  Direct-to-Consumer Advertising
FDA  U.S. Food and Drugs Administration
Rx   Prescription Drugs
FMCG Fast Moving Consumer Goods Industry
R&D  Research and Development
PBPS Prescription Drug Brand Personality Scale
CDP  Customer-Driven Positioning Model
IA   Information Architecture
1. Introduction

Longer life expectancy as well as fertility rate decline have led to an increase in elderly population in the last century (United Nations, 2017). Even though mortality rate might increase with age since people are more vulnerable to accidents and age-related diseases, lifespan extension can be achieved through prevention and treatment mechanisms such as medical care, balanced food intake, and exercising (Tavernise, 2016).

According to UN’s report World Population Ageing: 1950-2050, “population ageing is unprecedented, without parallel in human history” and it is estimated that by 2050 there will be 2 billion people over the age of 60, representing 22% of the world’s population. In addition, pharmaceutical revenues worldwide were over a trillion US dollars in 2014, with North America representing the largest portion and leading role of the industry (Statista, 2016). This scenario highlights relevant information that must be taken into account regarding pharmaceutical industry dynamics that have been shifting for the last couple of years.

Tebbey et al. (2009) mentioned three main aspects for the growth opportunity in health care: aging populations, increasing consumer influence over treatment choices and expanding prevalence with better diagnosis. Health challenges need to be tackled as means to provide a balanced standard of living for the elderly population. This means that pharmaceutical companies have the economic opportunity and social responsibility to address problems arising from extended population lifespan. It bends towards a two-way process of enabling people to live longer due to better drug advancements as well as acting in diseases that arise from advanced age.

The focus of the industry is not and will not be looking for everlasting life but rather raising life expectancy, improving health span and providing better quality on the aging process without major side effects. Presence treating a variety of age related dysfunctions is necessary but in order to gain strength and brand recognition, companies must position themselves and attract customers beyond price rage and fierce competition due to limited patent protection.

Because this industry entails a number of characteristics that differentiate it from other markets, such as consumer goods, it has to move its dynamics away from the well-known big players of these other industries (Kumar & Srivastava, 2013). First of all, a great proportion of the business
value comes from patent protections and know-how agreements (Blackett & Harrison, 2001) but generic drugs dominate the market once patents expire, with fall in sales by 90%-plus (Anderson, 2015). Hence the need for competitive differentiation to establish long-term brand building and to stay dominant in the market even during the post-patent period.

Second, the industry is highly regulated and vulnerable due to political and governmental intervention, which affects especially global companies that need to adjust their offerings to the countries in which they operate. In addition, brand availability is also affected by regulation since Over-the-Counter (OTC) drugs have far fewer restrictions than prescription drugs (Rx) (Handoo et al., 2012).

Finally, patient power has been increasing since the introduction of regulatory provision for Direct-to-Consumer (DTC) Pharmaceutical Advertising in 1960 (Ventola, 2011). Marketing activities became more sophisticated over the years while Food and Drugs Administration (FDA)’s interventions and rigidity turned out to be more elastic allowing patients to access information easily. This new pattern directly influenced sales of a specific brand through patient-physician relationship since doctors were the only ones who could prescribe drugs and would influence the purchase decision (Tebbey et al., 2009).

Under this new scenario, value could be communicated through various sources and improve the flow of information as well as the channels used by patients to enquire about health care (Rao, 2009). Besides it could strengthen the exchange of information between doctors and patients, enhancing even further the information transparency and relevance. That is why the value proposition had to be defined in order to understand the perceptions to be assimilated by the stakeholders and shape the brand positioning to be delivered.

With the purpose of tackling the challenges of this market shape, this research aims to answer at first a broader question:

- What communication strategies pharmaceutical companies develop for their anti-aging medicine?

And after considering major age-related dysfunctions (PhRMA, 2014) form neurodegenerative diseases, the focus will be on a more specific phenomenon:
How do pharmaceutical companies position their anti-aging medicine in order to foster a long-term brand building that will protect them from losing market presence even after patent expiry?

Bearing in mind that most studies around brand positioning are focused on traditional industries rather than the pharmaceutical, this research aims to cover the positioning strategies involved in the anti-aging sector in contrast with other markets that have been applying branding strategies for much longer. It is expected that the degree to which pharmaceutical industry is responsive to changes in demographics and market dynamics will dictate how successful their drugs will be in establishing brands to compete with generic drugs in the post-patent period.

It is noticeable that market dynamics have shifted in the last couple of years and that pharmaceutical companies can no longer survive in the long term strictly on P&D advancement and new drug introduction (Blackett & Harrison, 2001). There is a need to create and establish brands while patents are still valid so they are able to structure a strong image before the competition with generic drugs becomes fierce.

Since this study will turn around neurodegenerative conditions related to the aging process, the aim is to track pharmaceutical brands that present a clear positioning strategy as well as to analyze how these brands communicate their positioning regarding key stakeholders, namely physicians, patients and healthcare professionals. This will be accomplished through a literature review to bring the main studies and concepts on to the brand positioning and models to structure the theories. The framework and methodology will follow with the approach on analysis approach and data collection. The next session will cover data analysis through the lens of the framework along with discussions on the findings. The research will then be concluded and integrate potential topics for further research and limitations.

2. Literature Review

This session will cover the main studies on the research topic, bringing concepts and theories revolving around it. To do so, the concept of positioning will be discussed in its broad approach and will be followed by a more specific relevance of positioning geared towards the pharmaceutical industry, which is the core subject of this work.
2.1 Brand Positioning

Positioning is the process of defining distinctive characteristics, be it functional or emotional, to be perceived by the target market as “unique, attractive, and relevant to their needs” (Blackett & Harrison, 2001). Brand is characterized as name or symbol aimed at bringing unique aspects to products as means to differentiate it from competitors and “register in the mind of the consumer a set of tangible (rational) and intangible (irrational) benefits” (Kumar & Srivastava, 2013). This branding process involves a diverse range of activities, from the effectiveness of the product, needs of market segments, relevance of the benefits aligned to the target audience, uniqueness and value, until the fit between intended and perceived positioning (Blackett & Harrison, 2001).

When considering standpoints for brand positioning analysis, authors cover mainly traditional industries that have been applying marketing tools to improve long-term brand building and are already experiencing the positive results. The strategic effort is then translated in market value measured by the quality of their intangible assets (Blackett & Harrison, 2001). The authors bring Coca-Cola as an example of a brand with long-term success based mostly on its intangible assets. Dawar & Bagga (2015) also mention Coca-Cola as the most representative brand of its category in their C-D Map. Their model associate two variables, centrality and distinctiveness, to assess brand positioning strategy, track competition, manage brand portfolio as well as global brand and analyze results. Centrality touches upon representativeness of a brand whereas distinctiveness evaluates how one brand stands out from its competitors. These two variables generate four quadrants (Unconventional, Aspirational, Peripheral, Mainstream) and position brands relating the strategy, market and capabilities to sales, pricing and profitability.

Urde & Koch (2014), on their turn, explore brand positioning as a twofold challenge grasping not only the definition of the intended position but also the process design, execution and follow-up. From this discussion, positioning is defined to be market or brand oriented (Appendix 1). The first end of the spectrum refers to an outside-in approach that turns around brand image as means to fulfil stakeholders’ needs and wants. The other end is an inside-out approach that considers brand identity as means to satisfy stakeholders ranging from its core identity and the company’s mission, value and vision statements. Customer and non-customer stakeholders are viewed as the external component in the analysis whilst the organization is portrayed as the internal one, both embedding the brand core defined as promise and values associated to it. Urde et al. (2014) also
categorize different authors to each of these approaches so that Kotler and Keller are associated to market-oriented approach whereas Kapferer and Aaker to brand-oriented positioning. Although connections can be inferred to either perspective, the author reinforce that these forces are synergistic, meaning that a company has the choice of combining both paradigms and align them to their strategies.

When considering the brand identity slope, Kapferer’s prism (Appendix 2) comes into play with the six dimensions that will result in the brand’s deep inner inspiration and discovery of its own identity as means to gain strength. These hexagonal prism is comprised by the following traits: physique, referring to its tangible value such as physical aspect or a brand’s prototype; personality, that communicates the brand’s character and the human trait; culture, or “set of values feeding the brand’s inspiration” (Kapferer, 2008); relationship between people through transactions, be it customer or service oriented; reflection, that covers how people want to be seen through or to identify with the brand; and self-image, that on the other hand relates to the inner aspect and attitude towards the brand. This model encompasses four fundamental aspects of positioning according to the author, that is, it answers four questions related to segmentation (for whom?), target market (in which market?), elements of the brand core (promising what?), and evidence that supports the value proposition (proven by what?).

Under Aaker’s (1996) perspective, brand identity is the first step of brand management since it will design what the brand represents and offers. According to him, brand identity is:

“a unique set of brand associations that the brand strategist aspires to create or maintain. These associations represent what the brand stands for and imply a promise to customers from the organization members. Brand identity should help establish a relationship between the brand and the customer by generating a value proposition involving functional, emotional, or self-expressive benefits.” (Aaker, 1996).

The author presents three layers comprising brand identity (Appendix 3). The inner layer refers to the brand essence which captures brand values and vision. The intermediate layer represents the core identity and represents its essence, making it sustainable, unique and valuable. The outer layer has to do with extended brand identity that is responsible for guiding the core identity towards the brand per se. Throughout these layers, twelve elements were defined under four main angles of the brand identity system: Product, Organization, Person, and Symbol. Brand as
Product encompasses product scope, attributes, quality/value, users, uses, and country of origin. Brand as Organization covers local and global presence as well as organization attributes such as innovation, consumer concern, trustworthiness. Brand as Person, on its turn, focuses on personality and relationship between the brand and the customer. Finally Brand as Symbol touches upon visual imagery and metaphors as well as brand heritage.

Lancaster’s Product Attributes Model (PAM) (Gwin & Gwin, 2003), finally, highlights three components for evaluating brand positioning: attributes of products, to understand consumer choices and preferences for specific brands; budget constraint and efficiency frontier, relative to the quantity and price a consumer can afford; and indifference curves, to verify the tradeoffs consumers are willing to swop in terms of utility. The advantage of this model, according to the authors, is that it incorporates the impact of price and consumer budget as components of the positioning analysis and promote a better overview of the customer-perceived attribute value in correlation with the price of the brand.

### 2.2 Brand Positioning in the Pharmaceutical Industry

Fast moving consumer goods (FMCG) industry has shaped the pharmaceutical industry and authors even pointed out that “branding theory and practice in pharmaceutical is still ten years behind the FMCG area” (Schuiling and Moss, 2004). This more experienced market has been assured that brands are a company’s key assets and all assets are further used to create and develop brands (Kumar & Srivastava, 2013). The point of divergence in strategies comes when branding design must adjust to major differences regarding FMCG and pharmaceutical industries (Kumar & Srivastava, 2013), exception made to OTC sector that performs similarly to retail markets (Leonard & Katsanis, 2013).

The major pharmaceutical industry challenge according to Blackett & Harrison (2001) is the constant cycle of product improvement, where latest brands often enter the market at the cost of existing ones. Historically the focus has been on products instead of brands (Leonard & Katsanis, 2013) and DTC advertising wasn’t that considerable until the 90’s (Ventola, 2001), when it started contributing to brand creation. From then on, the industry dynamics have been distancing from traditional marketing strategies, focused on R&D (Research & Development) and sales initiatives (Leonard & Katsanis, 2013).
Although DTC advertising is largely available in the US, pharmaceutical companies might still face restrictions in other countries. Furthermore, buyers and consumers don’t belong to the same cluster. High regulation and government intervention also represents a challenge to prescription-only drugs (Rx), which account for 90% of global pharmaceutical revenue. Moreover, information disclosure has been limited to doctors and healthcare professionals. Under this context, it is comprehensible that “a vast proportion of the value of the business is dependent on shareholders’ confidence in the intangible assets” (Blackett & Harrison, 2001).

Beyond confidence, the product’s own characteristics such as “intrinsic efficacy, safety, tolerability, onset of action, mechanism of action” (Dogramatzis, 2011) play a role in the pharmaceutical brand and product positioning, that is, where it will occupy in customers’ minds. As stated by the author, properties besides pharmacodynamic and -kinetic are also part of the brand positioning as collective influence, for instance word of mouth, opinion and recommendation of experts, celebrities as spokesperson, pricing and reimbursement systems, packaging (Dogramatzis, 2011). Considering market, product and company characteristics as well as regulatory environment in this model, the author brings up four categories for segment strategies: undifferentiated or mass marketing, differentiated or multiple-market, niche/single segment or target marketing, and custom or single customer marketing. He goes further in covering the layers of biopharmaceutical branding (Appendix 4), being it (1) core product or service relative to the core effects; (2) basic or actual brand represented by expected characteristics e.g. packaging; (3) augmented brand which encompasses homecare visits, free delivery, reimbursement deals; and (4) potential or enhanced brand focusing on the collective value that will touch upon customer retention. Finally, the model highlights promotional tools to promote biopharmaceuticals, comprising personal selling, advertising, public relations, and sales promotion.

Communicating the sources of value is intrinsic to the offer of a consistent value proposition that will influence the purchase decision for a new product (Rao, 2009). Rao (2009) tackles this impact on his new paradigm for positioning strategy (Appendix 5) in which “positioning strategies [are] based on a scientific, market-driven paradigm [that] will make for a commercialization process that effectively defines and communicates product value at every stage of the life cycle” (Rao, 2009). This framework presents the essential building blocks of the
positioning strategy in an effective and sustainable way grasping “what makes the product a brand, what the brand stands for to its customers and what is the best proven way to describe the benefits delivered by the brand to its customers” (Rao, 2009). The pillars of this model are (1) marketing strategy, leaning towards differentiation or extension; (2) product strategy, from product to portfolio focus; (3) communication strategy, either value driven or feature based; (4) commercial focus of science driven growth or market driven consolidation; (5) life cycle stage, early or mature; and (6) high or low market competitiveness.

Finally, merging Aaker’s (1996) and Geuens et al. (2009) scales of personality traits, Leonard & Katsanis (2013) came up with the Prescription Drug Brand Personality Scale (PBPS). Their study aimed at testing Kapferer (1998, 2012) “correlation between prescription levels and certain personality traits”, which focused on healthcare professionals and doctors, rather than consumers. The research tested whether consumers attribute human personality to prescription drugs and if so what dimensions are accentuated. The results were positive in what it suggests that human personality traits are attributed to prescription drugs and the two dimensions perceived by consumers are competence and innovativeness (Appendix 6). The first dimension encompasses the variables dependable, reliable, responsible, successful, stable, practical, and solution oriented whereas the other one covers unique, innovative, and original variables. Leonard & Katsanis (2013) further state that there is an “implied endorsement from the physician when a patient receives a prescription. In other words, consumers assume a doctor would not prescribe a “bad drug”” (Leonard & Katsanis, 2013).

2.3 Framework

Bearing these concepts and models in mind, the analysis suggested in this research will be focused on Vanderveer & Pines (2007) framework. The Customer-Driven Positioning (CDP) approach intends to guide physicians - the effective customers of prescription drugs for this analysis - to a bottom-up approach to “compose and design the positioning statement themselves […] using a sequence of exposure to elements that mimics the way they want to learn about new products” (Vanderveer & Pines, 2007). Positioning for the authors is:

“The fundamental basis for brand marketing strategy; it is the foundation of marketing a product, an internal statement of purpose that informs and drives the development of all subsequent marketing communications”. (Vanderveer & Pines, 2007)
The key aspect of the CDP methodology regards the sequence of exposure to elements of the positioning statement and the order physicians use to develop the statement themselves. This tool aims to close the gap of current marketing research techniques that use fully formed messages that mix clinical and emotional benefits with too idealistic aspirational claims of “what a product could be and not merely what it should be” (Vanderveer & Pines, 2007) thus creating a weak link. Physicians will perceive this flaw and will look at the whole idea as less credible, rejecting it all.

Unlike current strategies that do not differentiate the way customers learn and want to learn about a new product, the CDP method takes into account “the process by which physicians truly want to engage and learn about a new medication” (Vanderveer & Pines, 2007). Instead of reacting to “pre-positioning” statements developed by agencies or marketing organizations, physicians are prompted to come up with the positioning statement through a learning-then-building approach, as exposed in Figure 1:

<table>
<thead>
<tr>
<th></th>
<th>Problem Statement</th>
<th>Emotional Benefit (patients)</th>
<th>Emotional Benefit (physicians)</th>
<th>Reason to Believe</th>
<th>Reasons to Believe</th>
<th>Functional Benefit</th>
<th>Main Theme</th>
<th>Problem Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Functional Benefit</strong></td>
<td><strong>Emotional Benefit (patients)</strong></td>
<td><strong>Emotional Benefit (physicians)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Reason to Believe</strong></td>
<td><strong>Reasons to Believe</strong></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td><strong>Emotional Benefit (physicians)</strong></td>
<td><strong>Functional Benefit</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>Emotional Benefit (patients)</strong></td>
<td><strong>Main Theme</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><strong>Main Theme</strong></td>
<td><strong>Problem Statement</strong></td>
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</tr>
</tbody>
</table>

*Figure 1: Customer-driven positioning approach*

The first step of this methodology is similar to current ones in what it is based in pre-positioning research in order to set the key differentiating elements that will stand out a product from its competitors. Physicians are exposed to product profiles and give feedback on “key competitive advantages and drawbacks, as well as how it will be used within their therapeutic arsenal” (Vanderveer & Pines, 2007). This research stage is responsible for developing the “building blocks of the positioning process that will then form the basis of the CDP exercise” (Vanderveer & Pines, 2007) that are also exposed in Figure 1: Problem statements; Functional benefits; Reason to believe; Emotional benefits; and Main themes.
Instead of generating “fully formed positioning statements” as companies following the traditional process do, the following step of the CDP framework aims at associating key message elements to each of the rubrics from the first step:

<table>
<thead>
<tr>
<th>Problem statements</th>
<th>Functional benefits</th>
<th>Reason to believe</th>
<th>Emotional benefits</th>
<th>Main themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Articulates a specific unmet need in the marketplace that is being met by the brand in question”</td>
<td>“Essential clinical properties of a medication that intrinsically differentiate it from other medications”</td>
<td>“A reference to some scientific or mechanistic aspect of the brand that substantiates its main clinical benefits”</td>
<td>“Emotions that customers may derive from using the brand in question”</td>
<td>“The truly unique and aspirational advantage offered by the product in question”</td>
</tr>
</tbody>
</table>

*Table 1: Customer-driven positioning elements*

The goal of this method is to use elements of each section to generate a logical and persuasive message and challenge physicians to select message elements and defend their choices. The expected outcome of this application is to achieve the “optimal combination of elements that comprise the positioning statement” (Vanderveer & Pines, 2007) and that will message the implicit idea to be conveyed.

The CDP framework generates a positioning statement that can be introduced in the market through what the authors designate Information Architecture (IA). This IA messaging process guide physicians to develop the story with the basis from CDP and to become and serve as basis for promotional materials creation. “CDP is about the big idea behind the curtain, while IA translates that idea into a form that is presented in front of the curtain” (Vanderveer & Pines, 2007).

The learning-then-building approach proposed in this CDP framework offers the advantage of achieving a higher “aspirational ground” in product positioning that will reach out physicians. They are final consumers of prescription drugs since they represent the audience that needs to be convinced of the product benefits and differentiation factors to build trust in the brand. Gearing towards what physicians wish to learn at first (functional benefits) to then move to emotional benefits and aspirations (“reasonable and attainable emotions for a professional such as confidence reassurance and trust” Vanderveer & Pines, 2007) shows the inherent applicability of the CDP method in what it drives the positioning message from the final consumer.
3. Methodology

This research was designed under a qualitative content analysis on the topic discussed previously. Qualitative data was used to compare theory and data in order to shape and test hypothesis (Eisenhardt, 1989). The content analysis technique was selected since it “relies on several specialized procedures for handling text” that “can be thought of as tools for designing suitable analysis.” (Krippendorff, 2013). Qualitative content analysis support interpretations through “quotes from the analyzed texts and literature about the contexts of these texts” (Krippendorff, 2013) and this material was collected following three phases of analysis, as proposed by Bardin (2011):

1. Pre-analysis
2. Material exploitation
3. Results handling, inferences and interpretations

According to this technique, the first phase comprises five steps, starting with (1) fluctuant reading in order to establish the first contact with the available material then following to (2) document selection. This layer encompasses an exhaustive corpus to be narrowed down to the representative sample for the analysis, covering homogeneous and pertinent data that follow specific criteria and correspond to the objective of the research. Thereupon, (3) hypotheses are formulated and objectives are set so that the material can be then (4) categorized to substantiate final interpretations through organization in topics. Finally, the pre-analysis phase is completed with (5) document setup, which covers material selection based on images, experts, articles, etc.

The second step encompasses a deep diving on the material that was structured previously and leads to the third and last step of the analysis. At this stage, the selected material is turned into significant and valid data that is handled based on applicable inferences and interpretations. Results can be then exposed on a table to highlight key information provided by the analysis.

This flow was accomplished in this study with the selection of a defined literature review, covered in the previous session, as well as material from company and governmental records, brand websites, articles and news. Collected data was then displayed in tables and figures to
facilitate an overview of the key aspects covered in the study and organize the material to be further analyzed.

Based on the secondary data gathered, three neurodegenerative diseases were selected, namely Alzheimer (AD) and Parkinson (PD) - the ones the strike the most people over the age of 65 - as well as Amyotrophic Lateral Sclerosis (ALS) or Lou Gehrig’s disease, a rare one to monitor whether brand positioning is also representative for less prominent diseases and how it takes action. Two out of five FDA-approved drugs for AD have a brand positioning that enabled the analysis under the CDP prism. For PD, five out of 19 and only one out of two drugs for ALS presented a communication strategy to be assessed in this research. The totality of drugs for each disorder is shown in the following table:
<table>
<thead>
<tr>
<th>Disease</th>
<th>Mechanism</th>
<th>Active Ingredient</th>
<th>Brand Name</th>
<th>Laboratory</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS</td>
<td>Slow decline in loss of physical function</td>
<td>Edaravone</td>
<td>Radicava</td>
<td>Mitsubishi Tanabe Pharma America</td>
<td>2017</td>
</tr>
<tr>
<td>ALS</td>
<td>Decrease glutamate levels</td>
<td>Riluzole</td>
<td>Rilutek</td>
<td>Rhone Poulenc Rorer</td>
<td>1995</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>combined</td>
<td>Donepezil + Menantine</td>
<td>Namzaric</td>
<td>Allergan</td>
<td>2014</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>NMDA antagonist</td>
<td>Memantine</td>
<td>Namenda</td>
<td>Eli Lilly, Merz, Forest Labs (acquired by Actavis) and Lundbeck (licensees)</td>
<td>2003</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>cholinesterase inhibitor</td>
<td>Galantamine</td>
<td>Razadyne</td>
<td>Jansen</td>
<td>2001</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>cholinesterase inhibitor</td>
<td>Rivastigmine</td>
<td>Exelon</td>
<td>Novartis</td>
<td>2000</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>cholinesterase inhibitor</td>
<td>Donepezil</td>
<td>Aricept</td>
<td>Eisai</td>
<td>1996</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>cholinesterase inhibitor</td>
<td>Tacrine</td>
<td>Cognex (discontinued)</td>
<td>Warner-Lambert</td>
<td>1993</td>
</tr>
<tr>
<td>Parkinson</td>
<td>MAO-B inhibitors</td>
<td>Safinamide</td>
<td>Xadago</td>
<td>Newron Pharmaceuticals</td>
<td>2017</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Amantadine</td>
<td>Amantadine/extend ed-release</td>
<td>Gocovri</td>
<td>Adamas Pharmaceuticals</td>
<td>2017</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Levodopa</td>
<td>Carbidopa/levodopa</td>
<td>Rytary (ER)</td>
<td>Impax</td>
<td>2015</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Levodopa</td>
<td>Carbidopa/levodopa</td>
<td>Duopa</td>
<td>AbbVie</td>
<td>2015</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Dopamine Agonists</td>
<td>Rotigotine transdermal system</td>
<td>Neupro</td>
<td>UCB Pharma</td>
<td>2007</td>
</tr>
<tr>
<td>Parkinson</td>
<td>MAO-B inhibitors</td>
<td>Rasagline</td>
<td>Azilect</td>
<td>Teva Pharmaceuticals</td>
<td>2006</td>
</tr>
<tr>
<td>Parkinson</td>
<td>MAO-B inhibitors</td>
<td>Selegiline Hcl orally disintegrating tablet</td>
<td>Zelapar</td>
<td>Valeant Pharmaceuticals International</td>
<td>2006</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Dopamine Agonists</td>
<td>Bromocriptine</td>
<td>Parlodel</td>
<td>Novartis</td>
<td>2005</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Dopamine Agonists</td>
<td>Apomorphine</td>
<td>Apokyn</td>
<td>US WorldMeds</td>
<td>2004</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Anticholinergics</td>
<td>Trihexyphenidyl</td>
<td>Artane</td>
<td>Qualitest Pharmaceuticals</td>
<td>2003</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Levodopa</td>
<td>Carbidopa/levodopa</td>
<td>Stalevo</td>
<td>Novartis</td>
<td>2001</td>
</tr>
<tr>
<td>Parkinson</td>
<td>COMT inhibitors</td>
<td>Entacapone</td>
<td>Comtan</td>
<td>Novartis</td>
<td>1999</td>
</tr>
<tr>
<td>Parkinson</td>
<td>COMT inhibitors</td>
<td>Tolcapone</td>
<td>Tasmar</td>
<td>Valeant</td>
<td>1998</td>
</tr>
</tbody>
</table>
Table 2: Initial sample of neurogenerative disorders (AD, PD and ALS)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Mechanism</th>
<th>Active Ingredient</th>
<th>Brand Name</th>
<th>Laboratory</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkinson</td>
<td>Dopamine Agonists</td>
<td>Pramipexole/Dihydrochloride</td>
<td>Mirapex (ER)</td>
<td>Boehringer Ingelheim International</td>
<td>1997</td>
</tr>
<tr>
<td></td>
<td></td>
<td>extended-release</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson</td>
<td>Dopamine Agonists</td>
<td>Ropinirole/extended-release tablets</td>
<td>Requip (XL)</td>
<td>Glaxosmithkline</td>
<td>1997</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Levodopa</td>
<td>Carbidopa/levodopa / orally</td>
<td>Parcopa</td>
<td>SRZ Properties</td>
<td>1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>disintegrating tablet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson</td>
<td>MAO-B inhibitors</td>
<td>Selegiline/Deprenyl</td>
<td>Eldepryl</td>
<td>Somerset</td>
<td>1996</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Levodopa</td>
<td>Carbidopa/levodopa / controlled release</td>
<td>Sinemet (CR)</td>
<td>Merck</td>
<td>1993</td>
</tr>
<tr>
<td>Parkinson</td>
<td>Anticholinergics</td>
<td>Benztropine mesylate</td>
<td>Cogentin</td>
<td>Merck</td>
<td>1954</td>
</tr>
</tbody>
</table>

Each of these shortlisted drugs (highlighted on the table) had their own website pages and two versions were developed to address messages to either patients or healthcare providers. Images extracted from these pages were relevant for the analysis and embodied in the appendices section. Audio-visual sources were also considered according to the drugs at hand in case videos were also part of their communication strategies to deliver key messages. From the frameworks discussed on the previous section, the CDP was selected to go further and guide the communication and positioning analysis for the next step of this research.

The goal of this approach is to look into different material to go beyond initial impressions gathered through previous frameworks and concepts while testing the one that was more relevant to the research topic. This study path outlines the situation from a broader and comparative perspective and grasps on the field, that is, through concrete material, the fundamental aspects encompassed in the study, such as communication strategy, brand positioning, and marketing strategy.

4. Analysis and Discussion
This section will (1) present the group of age-related disorders appointed, (2) expose the approved drugs to treat or mitigate the symptoms, (3) select those anti-aging drugs with a
disclosed brand positioning so that the CDP framework discussed previously in the Framework unit can be (4) applied to support in (5) analyzing the collected data.

4.1 Neurodegenerative disorders
With the aging population worldwide, neurodegenerative diseases are becoming more and more frequent (Johnson, 2015). The market for neurodegenerative disease is estimated to grow at a high pace and experience advancements in the launch of new drug types in the following years (Future Market Insights, 2017). It is estimated that more than 44 million people globally are affected by AD or related dementia (Alzheimer’s Association, 2017) and 7 to 10 million by Parkinson’s disease (Naqvi, 2017). These are the most common neurodegenerative disorders, along with Lewy body dementia, frontotemporal dementia, ALS, and Huntington (Bertram & Tanzi, 2005). Furthermore, the most prevalent neurodegenerative diseases are dementias (JNPD, 2017).

“Neurodegenerative disorders are characterized by progressive loss of selectively vulnerable populations of neurons” (Dugger & Dickson, 2017). Age is the main factor that increases the risk of being affected by such disorder as “there is some factor that changes as a person ages […]. One constant factor is that in each disease, neurons gradually lose function as the disease progresses with age […] resulting in progressive degeneration and/or death of neuron cells” (Lagouge & Larsson, 2013). However, it is acknowledged that not only genes but also the environment has an impact on this risk (Hollander & Lawler, 2017).

Since neurodegenerative diseases are associated with loss in function over time and death of nerve cells in the brain or nervous system, treatments are unable to cure or slow down the disorder’s progression. What drugs do is to act in relieving physical and/or mental symptoms associated with the disorders and enhance quality of life with minimum side effects (Hollander & Lawler, 2017).

4.1.1 Alzheimer
Recognized as the most common type of age-related dementia and neurogenerative disease (Gitler & Chuang, 2013), Alzheimer is the 6th leading cause of death in the US (Alzheimer’s Disease Fact and Figures, 2017). Already representing 60-70% of dementia cases, it is estimated that 1 out of 85 people over 65 will contract it by 2050 (JPND, 2017). The onset of the disease is mostly at the age 65 or older and, up this age range, approximately 6% are diagnosed with it
Early stage symptoms of the disease include memory loss of recently learned information and can progress from “disorientation, mood and behavior changes” to “difficulty speaking, swallowing and walking” (Alzheimer’s Association, 2017).

The US Food and Drug Administration (FDA) has currently five drugs approved for the treatment - or symptom alleviation - of Alzheimer’s disease (see Table 3). Apart from the ones presented by the FDA at the moment, tacrine (brand name Cognex by Warner-Lambert) had also made into the list since it was released in 1993 as the first cholinesterase inhibitor for Alzheimer’s treatment. However, in 2013 the drug was discontinued in the US allegedly due to adverse drug reactions (nausea, vomiting, rash, diarrhea), the need of four daily doses, and poor oral bioavailability (absorption). Even though these drugs do not delay the progression neither treat the condition, it acts in relieving the symptoms and providing a higher life expectancy as well as wellbeing for patients suffering from it.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Active Ingredient</th>
<th>Brand Name</th>
<th>Laboratory</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>cholinesterase inhibitor</td>
<td>Tacrine</td>
<td>Cognex</td>
<td>Warner-Lambert</td>
<td>1993</td>
</tr>
<tr>
<td>cholinesterase inhibitor</td>
<td>Donepezil</td>
<td>Aricept</td>
<td>Eisai</td>
<td>1996</td>
</tr>
<tr>
<td>cholinesterase inhibitor</td>
<td>Galantamine</td>
<td>Razadyne</td>
<td>Jansen</td>
<td>2001</td>
</tr>
<tr>
<td>NMDA antagonist</td>
<td>Memantine</td>
<td>Namenda</td>
<td>Eli Lilly, Merz, Forest Labs (acquired by Actavis) and Lundbeck (licensees)</td>
<td>2003</td>
</tr>
<tr>
<td>cholinesterase inhibitor</td>
<td>Rivastigmine</td>
<td>Exelon</td>
<td>Novartis</td>
<td>2000</td>
</tr>
<tr>
<td>combined</td>
<td>Donepezil + Memantine</td>
<td>Namzaric</td>
<td>Allergan</td>
<td>2014</td>
</tr>
</tbody>
</table>

Table 3: FDA-approved drugs for Alzheimer’s disease

These FDA-approved drugs, including the discontinued one, perform through different mechanisms: cholinesterase inhibitor (tacrine, donepezil, galantamine, and rivastigmine) and N-methyl-D-aspartate (NMDA) antagonist (memantine). The first one aims at improving cholinergic neurotransmission in the brain, related to the acetylcholine neurotransmitter, responsible for cognitive performance. The latter acts on regulating glutamate, a neurotransmitter...
linked to memory and learning and another one of the hundreds of neurotransmitters associated with the Alzheimer’s impairment. When in excess, glutamate is extremely toxic for neurons since it unleashes overexposure to calcium, leading to neuronal death. Therefore, what memantine does is prevent high quantities of calcium to entry the neurons thus avoiding cell damage.

The most recent approval was the combination of drugs from both active properties through memantine and donepezil (brand name Namzaric). According to Mário Luiz Bochembuzio, Aché’s medical director, this association provides more benefits for the patience simultaneously since donepezil reduces symptoms of depression, anxiety and apathy whereas memantine acts on aggressiveness, irritability, agitation, and psychosis.

From the list of approved drugs for the treatment of Alzheimer, the ones that present a brand positioning to be analyzed in this research are Namenda and Namzaric, highlighted on the table 3. They will be discussed more in depth below according to the rubrics of the CDP framework.

4.1.1 Namenda (memantine)¹

Namenda is used for the treatment of moderate to severe Alzheimer’s disease and consist of an extended-release capsule of memantine hydrochloride to be added on the current therapy in order to improve overall function as well as cognition and to “slowdown the worsening symptoms for a while”. There used to be Namenda tablet that had to be taken twice a day but the once-daily extended-release capsule has been replacing it. This information is explained on the website in a straightforward way with the aid of images to help people understand the transitioning. On the website there are explanation about the benefits, dosing and side effects of Namenda, about Alzheimer’s diagnosis, stages, symptoms and treatment option, support and Q&A to suggest activities to stimulate memories for instance.

Within these categories, data regarding each of the rubrics proposed on the CDP methodology can be extracted. Corresponding to problem statement and what specific need is met by the

¹ http://www.namendaxr.com/ and http://www.namendaxrhcp.com/#
product, the website affirms that Namenda XR works differently than other Alzheimer’s disease drugs because it can be used alone as memantine or in combination with other acetylcholinesterase inhibitors (AChEIs), namely Aricept® (donepezil), Razadyne® (galantamine), and Exelon® (rivastigmine). Figures 2 and 3 show how this information is also disclosed on the website to facilitate the understanding for customers, showing that that customer-driven approach applies to this brand strategy.

This convenience can also be covered by the reason to believe section in what it associates scientific and mechanistic aspects that substantiate the clinical benefits. This is seen on the following passage: “Does your loved one have difficulty swallowing medications? Namenda XR capsules may be opened and the contents sprinkled on applesauce”. Both characteristics can also be categorized on the main theme bucket since it explores the unique and aspirational advantages that this product offers, namely more practical intake that can be combined with other medication to alleviate symptoms of AD and help patients go through the disease with smoother side effects.

The functional benefits are addressed with this information because they refer to clinical drug properties that differentiate it from others. It is more accentuated on the description that claims “Namenda XR works differently than other medications for Alzheimer’s” because it can be conjoined to an already existent AChEIs therapy to boost improvement of overall function, cognition and delay the symptoms for a while. It also reports that “there is no evidence that Namenda XR prevents or slows the underlying disease process in patients with Alzheimer’s disease”, aiming at transparency so that trust and reliability can be built with the consumer. Side effects and risks are also tackled through the lens of functional benefits so that allergic patients won’t be harmed and drug
interaction be considered. Finally, **emotional benefits** are conveyed through text and images. First of all, sentences are constantly treating the patient as the “loved one”, for instance “if your loved one has moderate to severe Alzheimer’s”, “what if my loved one has never taken Namenda?”, “if you are caring for a loved one”. This speech reflects the positioning to those in close contact to patients, so the strategy is to provide information for this segment. Pictures displayed on the website (Figures 4-6) reinforce this emotional load and the position of figure 6 in the front page show how important this sensitive connection is within this strategy, since it occupies most of it with the image of a caring kiss.
4.1.1.2 Namzaric (Memantine + Donepezil)²

Namzaric is a once daily oral capsule of acetylcholinesterase inhibitor (AChEIs) combined with glutamate receptor blockers used to fight the symptoms of moderate to severe Alzheimer’s disease (see Figure 13). According to the rubric problem statement of the CDP framework, Namzaric covers the unmet need for being “the first and only once-a-day treatment that works in two ways in the brain to help fight the symptoms of moderate to severe Alzheimer’s disease”, given its combination of both active properties.

What this information also covers is the main theme session, that is, the unique and aspirational advantages offered by this product specifically. Other drugs used for AD treatment are also mentioned on the page, with its correspondent registered trademark references, so that consumers that have been already receiving a treatment be aware that an alternative with Namenda is possible. It is stated that “if your loved one is taking a different AChEI – Exelon® Patch (rivastigmine) or Razadyne® (galantamine HBr) – or a dose other than 10 mg of donepezil HCl, ask the healthcare provider about combination therapy and if adding NAMENDA XR to your loved one’s current treatment may be right for him or her” and “Namzaric is a prescription medicine approved to treat moderate to severe Alzheimer’s disease in patients who are taking donepezil hydrochloride 10 mg, the active ingredient in Aricept®” . This is shown on the “Benefits of Namzaric” tab and clearly states the drug names for both active mechanisms and the combination of the only NMDA antagonist (Namenda) with one of the cholinesterase inhibitors: rivastigmine (Exelon), donepezil (Aricept) or galantamine (Razadyne). It emphasizes the strength of brand exclusivity of this market even considering the similar mechanism of action, which confirms the industry characteristic of patent vulnerability. The swift to a brand positioning is helpful in what it aims at final consumers to gain trust and assurance from the beginning and Namzaric has the advantage of being the first combined drug in this scenario.

This previous statement is also incorporated in the reason to believe rubric which encompasses “scientific or mechanistic aspect of the brand that substantiates its main clinical benefits” of the CDP model. To complete this session, there is more specific information regarding the effects of

its clinical benefits as following: “If your loved one with moderate AD is taking donepezil 10 mg, NAMZARIC may improve cognition, also known as mental function; improve overall function; slow down the worsening of symptoms for a while”. In addition to the positive outcomes the drug can deliver, it doesn’t hide the fact that “there is no evidence that NAMZARIC prevents or slows the underlying disease process in patients with AD”, supporting the approach of being clear and transparent with customers as well as focused on conveying trust.

This strategy is also incorporated in functional and emotional benefit rubrics. The first one is also comprised in the problem statement with its differentiating characteristics, on the main theme as the aspirational advantages of this drugs, and on reason to believe since it tackles the mechanisms responsible for its clinical benefits. Apart from these information, the website offers a “side effects” tab as well as full prescribing information access which presents details of components, contraindications, drug interactions, clinical studies, among other. This session is similar to the information that the other brands (Aricept, Razadyne, and Exelon) have communicated online. It is important to acknowledge that Namzaric hasn’t suspended this traditional information channel but instead developed a brand positioning simultaneously to expand its strategy and still reach both audiences.
Finally, there is the **emotional benefit** which is constructed twofold, with writing and visual representations. The written input is not geared directly towards patients, since they might be already struck by the symptoms of AD by then, but to their close contacts and probably the ones that purchase the prescribed drugs. This is constructed based on expressions such as “if your loved one”, “tell the doctor about all of the patient’s medical conditions”, “having a better understanding of how Alzheimer’s progresses can help you care for your loved one”. No pronoun is used directed to patients and the sentences are focused on those emotionally involved caregivers. This is reinforced by the images on the page, showing three different level of relationships and their representative role in each patient’s life (Figures 7-9). As can be seen on figure 7, there is a senior couple close to each other with the following sentence “I realized my wife’s Alzheimer’s symptoms had progressed when she got lost on the way home”. In this context, the pain of the partner is portrayed also through facial expressions of both. As for figure 8, there is another couple expressing their distress and the sentence clarifies which one has been suffering from AD: “I realized my husband’s Alzheimer’s symptoms had progressed when he didn’t recognize our grandson”. At last, the degree of kinship represented on figure 9 is father and son, explained with the note at the bottom of the image saying “I realized my dad’s Alzheimer’s symptoms had progressed when he forgot how to use the phone”. It is also relevant to note that these images are arranged on the top of the page and occupy most of the space, as can be seen on figure 9.
4.1.2 Parkinson

The second most common neurodegenerative disorder after Alzheimer’s (Bertram & Tanzi, 2005), Parkinson’s disease (PD) affects central nervous system and 5 to 10% of PD patients have already a family history (Gitler & Chuang, 2013). Motor symptoms are triggered by the disease, such as tremors, slowness of movements, walking and balance problems, as well as non-motors symptoms that are “associated with Parkinson but are not components of the typically more widely-recognized (and disease-defining) motor symptoms”. Examples of non-motor medication include those acting in constipation, fatigue, sleep problems, and urinary disturbances but these are not covered in this research since they are not specific to PA (The Michael J. Fox Foundation for Parkinson’s Research, 2017). Motor medication, on the other hand, is highlighted in this section and acts differently according to its components to prevent or slow the progression of PD.

**Levodopa (or L-dopa)** was approved in the late 1960s and is considered the most effective medication for PD and acts as replacement for deficient neurotransmitters, being usually combined with benserazide or carbidopa (prevents levodopa breakdown). After a prolonged period of medication, patients might face on/off episodes and complications so alternative drugs
might replace it once L-dopa can no longer be stored in nerve terminals to control patients’ symptoms (Münchau & Bhatia, 2000).

Other mechanism to treat PD is **dopamine agonists**, that act on receptors as imitate inner neurotransmitters. These offer some advantages over L-dopa, namely longer duration of action, sparing effect and neuroprotection due to a decrease in dopamine turnover. Still, they are usually used in combination with L-dopa once motor symptoms have developed (Münchau & Bhatia, 2000).

**Monoamine Oxidase B (MAO-B) inhibitors** is a relatively new therapy responsible for reducing or delaying dopaminergic neurons damage and allowing dopamine to function for an extended period. It can be taken alone or with levodopa with the reduction of L-dopa dose from 10-30% (Münchau & Bhatia, 2000).

**Catechol O-Methyl Transferase (COMT) inhibitors** acts as adjunctive therapy to L-dopa since it mediates a catalyzed reaction of one of L-dopa enzymes (aromatic acid decarboxylase) and promotes less variation in plasma levels of L-dopa, reducing “off” episodes by 40% (Münchau & Bhatia, 2000). In other words, it prolongs the “effect of levodopa by blocking its breakdown in the body” (Parkinson’s Disease Foundation, 2016).

Another mechanism that acts on PD is **anticholinergics** that act on tremor and stiffness but since they might aggravate confusion states and concentration, its use has to be cautiously administered. They work by suppressing the brain chemical messenger responsible for movement and memory. Even though it is the oldest medication for PD (first approval in 1954), the availability of more effective medication and the harsh side effects decrease its reach (Parkinson’s Disease Foundation, 2016).

**Amantadine** is another class of medication that is not entirely known but helps releasing dopamine in the brain or retard its breakdown (Parkinson’s Disease Foundation, 2016). The first drug specifically indicated for uncontrolled movements (dyskinesia) caused by prolonged use of levodopa was Gocovri, approved in August 2017 (Teesdale, 2017).

The following table categorizes the drugs according to their mechanisms of action:

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Active Ingredient</th>
<th>Brand Name</th>
<th>Laboratory</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>dopamine agonists</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monoamine Oxidase B (MAO-B) inhibitors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Catechol O-Methyl Transferase (COMT) inhibitors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anticholinergics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amantadine</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levodopa</td>
<td>Carbidopa/levodopa/controlled release</td>
<td>Sinemet (CR)</td>
<td>Merck</td>
<td>1993</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Carbidopa/levodopa/orally disintegrating tablet</td>
<td>Parcopa</td>
<td>SRZ Properties</td>
<td>1996</td>
<td></td>
</tr>
<tr>
<td>Carbidopa/levodopa/entacapone</td>
<td>Stalevo</td>
<td>Novartis</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>Carbidopa/levodopa/extended-release capsules</td>
<td>Rytary (ER)</td>
<td>Impax</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>Carbidopa/levodopa/enteral suspension</td>
<td>Duopa</td>
<td>AbbVie</td>
<td>2015</td>
<td></td>
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<tr>
<td>Apomorphine</td>
<td>Apokyn</td>
<td>US WorldMeds</td>
<td>2004</td>
<td></td>
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<tr>
<td>Bromocriptine</td>
<td>Parlodel</td>
<td>Novartis</td>
<td>2005</td>
<td></td>
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<td>Dopamine Agonists</td>
<td>Pramipexole/ Dihydrochloride extended-release</td>
<td>Mirapex (ER)</td>
<td>Boehringer Ingelheim International</td>
<td>1997</td>
</tr>
<tr>
<td>Ropinirole/ extended-release tablets</td>
<td>Requip (XL)</td>
<td>Glaxosmithkline</td>
<td>1997</td>
<td></td>
</tr>
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<td>Rotigotine transdermal system</td>
<td>Neupro</td>
<td>UCB Pharma</td>
<td>2007</td>
<td></td>
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<td>Rasagiline</td>
<td>Azilect</td>
<td>Teva Pharmaceuticals</td>
<td>2006</td>
<td></td>
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<td>Selegiline/Deprenyl</td>
<td>Eldepryl</td>
<td>Somerset</td>
<td>1996</td>
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<td>Selegiline Hcl orally disintegrating tablet</td>
<td>Zelapar</td>
<td>Valeant Pharmaceuticals International</td>
<td>2006</td>
<td></td>
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<td>Safinamide</td>
<td>Xadago</td>
<td>Newron Pharmaceuticals</td>
<td>2017</td>
<td></td>
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<td>Entacapone</td>
<td>Comtan</td>
<td>Novartis</td>
<td>1999</td>
<td></td>
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<td>COMT inhibitors</td>
<td>Tolcapone</td>
<td>Tasmar</td>
<td>Valeant</td>
<td>1998</td>
</tr>
<tr>
<td>Benztropine mesylate</td>
<td>Cogentin</td>
<td>Merck</td>
<td>1954</td>
<td></td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Trihexyphenidyl</td>
<td>Artane</td>
<td>Qualitest Pharmaceuticals</td>
<td>2003</td>
</tr>
<tr>
<td>Amantadine/extended-release</td>
<td>Gocovri</td>
<td>Adamas Pharmaceuticals</td>
<td>2017</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: FDA-approved drugs for Parkinson’s disease

All recently approved therapies for PD have a brand positioning, regardless of their fresh market introduction. That shows new strategies pattern of “incorporating marketing strategies throughout all phases of drug development process” (Dogramatzis, 2011).
4.1.2.1 Rytary (Carbidopa + Levodopa)³

This drug is composed of capsules combining immediate and extended-released levodopa and carbidopa. It was FDA-approved in 2015 and acts on the treatment of PD in relieving motor symptoms of the disease, such as tremors, stiffness, and slowness mainly when the patient is presenting more considerable “off” time or symptoms with the other formulations. Compared to other levodopa/carbidopa treatments, Rytary demands fewer daily dosages (3-5 times a day) and provides a more constant level of levodopa in the organism that might reduce long-term dyskinesia. The capsule can also be opened and sprinkled on “applesauce or food of similar consistency for immediate consumption” in case the patient presents trouble swallowing. (The Michael J. Fox Foundation for Parkinson’s Research, 2017).

Applying CDP framework to Rytary’s positioning, the **emotional benefits** rubric is the one that strikes the most right at the first page of the website (Figure 10). It explores “real people” and “real stories” linked to the drug and they represent the achievement of activity performance enabled by Rytary (e.g. boxing, shooting, crafting). Everyone has a name so that it is personalized and more intimate than choosing random people and it is followed by a “watch now” hyperlink, where patients can assess videos from each of these people’s experiences in order to “meet real patients taking Rytary, and hear about their journeys” (Figure 11). Apart from that, key tabs containing information about the drug, the disease and support programs are prominent on the first page. Another feature that can be categorized under the emotional umbrella regards the speech addressed to the patient: “ask your doctor”, “goals to aim for when you live with PA”.

However, these elements comprise the patient version on the website. The healthcare professionals page has a different layout on the front page (Figure 18) and is addresses to its audience (“get your patients started on Rytary”, “connect your patients to a world of support”). Images are not linked to people (even less with names and closeness such as the patient’s version) and it contains all information regarding trials and studies about the drug that the other version disregards (Figures 19-20). Results represented by these images are also impacting the main theme, that is, the truly unique advantage represented on the healthcare professionals page stating that Rytary promotes “less “off” time and a 2x increase in “on” time without troublesome dyskinesia”. Details ascertaining the drug’s efficacy along with videos from patients reporting their experiences can be categorized under the reason to believe rubric, since they substantiate the main clinical benefits combining the scientific evidence with empirical material. The reality of this material has not been checked but assumed that it genuinely represents real life experiences and not constructed input.
Information regarding the effectiveness of the drug is also comprised on the **functional benefits** section of the CDP model in what it states the substantial properties of the drug that differentiates it from other carbidopa + levodopa medications. These detailed information however are only found on the healthcare professionals version whereas on the patients’ page a simpler explaining is given regarding the benefits of the drug: “Rytary is a prescription medication that contains a combination of carbidopa and levodopa for the treatment of Parkinson’s disease, Parkinson’s disease caused by infection or inflammation of the brain, or Parkinson’s disease resulting from carbon monoxide or manganese poisoning”. Safety information is attached at the bottom of each tab revealing the concern of transparency and safety for patients, from what trust is built. Side effects and a full prescribing information tab are also included on both versions of the website as well as an interactive dosing chart. Other differentiating features of the drug refer to its dosage, explained in an straightforward way written and with the aid of images: “Rytary is swallowed. Rytary is released. Rytary is still available in the body” and “you can take Rytary with applesauce” (see Figure 22 and 23).

Finally, the **problem statement** is shown on the reduction of “off” time compared to other products in the market place and the improvement of “on” time during waking hours, also present in the reason to believe rubric. This information is exposed in a more detailed way on the patients’ version since it states that the “goals to aim for when you live with PD are 1) maintaining your current activity level, 2) experiencing more “on” time by decreasing “off” time,
3) being able to move and perform daily tasks, 4) maintaining relationships with family and friends”. Discount price information was also found on the patients’ version (Figure 24) on the bottom of each page, right before safety information. It might be a vestige of traditional strategies or even an attempt to position itself in comparison to other levodopa + carbidopa treatment options.

4.1.2.2 Duopa (Carbidopa + Levodopa)⁴

Approved in the same year as Rytary, Duopa is an immediate-release gel composed of levodopa that is supposed to bypass the stomach and be absorbed steadily in the small intestine and with steadier levels of levodopa, decrease dyskinesia and “off” time. This administration aims to avoid irregular dosages of the drug since the stomach might function irregularly and slowly for PD patients, that must surgically implant a tube into the intestine to attach an external device that will pump Duopa into it. This procedure is not supposed to undermine daily activities and is an alternative to DBS (deep brain stimulation) for those unable or uninterested in undergoing such surgery.

This enteral suspension method is the key differentiation factor that comprises both functional benefits and main theme, since it not only presents an essential clinical property but also has a unique advantage to offer. Duopa’s website present these messages but in two different version of the website: one intended to patients and the other to healthcare professional, both designed differently, as shown in Figures 12 and 13. The first one, directed to patients, already shows a more personalized approach with pictures of people, a session covering “real people, real story”, These characteristics can be analyzed through the emotional benefits rubric of the CDP method, since it attempts to create a connection with patients, whereas the healthcare professional aim is to collect information to understand which option to prescribe to patients (Figure 27) whilst focusing mainly on functional benefits such as research data, study design, and method (Figures 28-30). It is also present on the other version but in a more explanatory speech and in less visual tabs, so that patients have to look into it in order to gather information about it whereas

healthcare professionals receive this information more easily considering it is already there after one click.
The problem statement on the healthcare professionals’ version covers three pillars of the “Duopa delivery system”, comprising “same active ingredients as oral carbidopa/levodopa continuously delivered as enteral suspension for 16 hours”. This “unique delivery system designed to administer Duopa at a constant rate” also reflects the mechanism that substantiates its main clinical benefits, that is, the reason to believe from the framework. A different strategy applies on the patients’ version of the website, where it says that “Duopa is a prescription medicine used for treatment of motor fluctuations in advanced Parkinson's disease. Duopa is not a pill. It's a suspension form of carbidopa and levodopa”. It is a simpler statement and details about the procedure are given afterwards, whereas for healthcare professionals this is the key content of the message straight away.

The sentence at the bottom of the front page of the patients’ version saying “Pardon me Parkinson’s but this it my time” suggests an empowerment provided by Duopa’s properties that substantiates the aspirational advantage of the medication. This is absent on the other version. And pronouns such as “your body’s movement”, “your stomach” on the patients’ version and “your patients” on the healthcare professionals’ one, reinforces the target audience of each page.
4.1.2.3 Apokyn (Apomorphine)\(^5\)

The dopamine agonist Apokyn also presents two different versions for its website, one addressed to patients and the other to healthcare professionals. The problem statement is already given on the presentation of the drug and the message is given differently as shown below:

- Patients page: “APOKYN, also known as apomorphine hydrochloride injection, is a prescription-only medication that is used as needed to treat the symptoms of off episodes associated with advancing Parkinson's disease (PD).”
- Healthcare professionals page: “APOKYN is the only FDA-approved therapy in the United States for the acute intermittent treatment of hypomobility—off episodes. It has been studied as an adjunct to other PD medications. APOKYN can provide a rapid and reliable return to an on state for Parkinson's disease (PD) patients suffering from off episodes. APOKYN reverses off episodes in as early as 10 minutes and enables your patients to resume their daily activities.”

Both cover the indication of the drug, that is treating the troublesome loss of movement control, also called hypermobility or “off” episodes but in different approaches. The clinical name (hypermobility) only appears on the healthcare professionals page, along with details of Apokyn’s clinical proprieties whereas the other version uses the current expression “off episodes” to describe it and doesn’t give clinical details of its mechanism. This version is more compact in the sense that it delivers straightforward messages, focusing more on emotional benefits such as images and a “real patient stories” tab (Figures 14-16).

\(^5\) https://www.apokyn.com/ and https://www.apokyn.com/HCP
As means to substantiate the clinical benefits of the drug, the **reason to believe** rubric of the CDP method comes into play and is strongly represented on the healthcare professional website with the aid of graphs (Figures 34 and 35) explaining the action of levodopa on PD symptoms and the effect of Apokyn on this pattern. It also presents results of recent Apokyn clinical trial and a case studies tab.
**Functional benefits** are the unmet needs in the marketplace that Apokyn is aiming at and are tackled on what the drug can offer to patients, that is “provide rapid and reliable return an “on” state; help manage your PD symptoms by quickly ending “off” episodes; be used reliability first thing in the morning; help you walk, talk, and move around more easily; be used to when you need it, up to 5 times a day”. This statement is explored on the patients’ version while on the other version the emphasis is given on safety and efficacy as well as on detailed information about its mechanisms.

At last, the **main theme** as the truly aspirational advantage offered by Apokyn is stated on both versions, where it is said that it “can help you start your morning and your day” for patients and it “may enable a person with PD to walk, talk, or move around more easily, returning to an “on” state as early as 10 to 20 minutes”. A distinct approach is acknowledged on the essence of each message, the first focusing the on the patient experience (start your morning and your day) and the other on the physical aspect of the situation (walk, talk, move around). “You” and “a person” also suggest this shift. The speech target of both websites is also different since patients are addressed with “you are moving”, “your PD symptoms” whereas the other version presents sentences such as “when a patient is experiencing “off” episode”, “identifying Apokyn candidates”. Moreover, the first version uses the verb “can” whereas the second uses “may”, showing either a formality distinction or a slightly different approach on the probability of Apokyn’s effects, representing more confidence and higher possibility with “can” to reassure patients whilst “may” infers a more realistic picture to healthcare professionals.

4.1.2.4 Xadago (Safinamide)⁶

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Xadago is also in the category of a MAO-B inhibitor and acts as an add-on therapy for patients who are already taking levodopa and experiencing “off” episodes, which is the return of symptoms despite the current dosage mainly due to the disorder’s progression. It is a daily tablet to be taken orally and its truly unique advantage is the increase on the total daily amount of “on” time, that is, when the drug is able to control the symptoms without an increase in their current levodopa dosage. The main theme is then enhanced with the benefit offered by the new drug in what if promotes significant improvements in three major areas: less off time, more on time, and no dyskinesia (loss of movement control). This benefit is exhibited with the aid of a visual flow (Figure 17) to help customers see more clearly the key advantages of the drug.

The triple mechanism also substantiates the main clinical benefit of motor symptoms improvement, exposed on the website through an image compiling the elements that are being tackled by the drug (Figure 17). This is part of the reason to believe rubric of the CDP method in what it explores the means through which the benefits are being met. Furthermore, it covers the unmet need of the marketplace linked to the problem statement referring to the reduction of “off” time on patients already taking levodopa without increasing its dosage.

The written support used to underlie this rubric is focused on questions to reach customers and make them reflect on how their lives will be impacted by the new drug. This topic is representing questions such as “What will you do with less daily “off” time? / an improvement in your mobility? / an hour of more daily “on” time – without troublesome dyskinesia?” and associating them with pictures. They serve as examples of activities patients would be able to do once their symptoms are controlled (Figures 36) and cover the emotional benefits of Xadago in what it promotes more enjoyable moments and help people participate more actively in their lives even though they are affected by PA.
As means to complement this rubric and open the array of options for activities that are enabled by the drug, other questions are made in a customized way using the brand name: “Where will you go Xadago?”, assimilating the name with the activity thus promoting the freedom patients wish to have to live life with better quality. Answers to these questions are given through pictures (Figures 38-40) representing patients that were enabled to perform activities thanks to the Xadago “Ceila goes exploring”, “Darin goes fishing”, “Stacey goes exercising”, “Michael goes golfing”, “Bob goes dancing”. The names act on personalizing and giving a sense of reality for the examples, even though it is stated that those pictures are fictional. Aligned to this strategy, on top of each tab the name “Xadago” comes highlighted on the GO syllable followed by an activity: “XadaGO fishing/Dancing/Golfing/Exploring/Exercise” (Figure 36).

The last feature added to this rubric relates to the sentence “Here is what a typical day looks like for you or your loved one with PD”, targeting either patients or people closer to patients. It differentiates from AD drugs in two points. The first one is that is only appears once on Xadago’s website whereas for Namzaric and Namenda it is constantly repeated. Secondly, Xadago expands its segment to patients as well, instead of only people close to them. It might be due to the fact that AD patients are unable to search for such information once the disease strikes them.

The final rubric of the CDP framework to apply for this brand refers to the functional benefits the medication offers to differentiate if from competitors. It was already explored by the triple mechanism, which is also an aspirational advantage (main theme) since it helps patients practice exercises, accomplish daily tasks, and participate more actvily in acivities of their preferences. The clinical properties of Xadago is explained with the aid of an image (Figure 41) along with the written explanation: “Adding Xadago to your levodopa/carbidopa medicine may increase your dopamine levels – and reduce some of your PD motor symptoms”. Both types of messages combined aim at providing clearer and more straighforward information to customers.

Another strategy to help patients is the tool (Figure 42) to assess the percentage of “on” and “off” time according to six questions: How do you feel 1) when you wake up in the morning?, 2) mid-morning?, 3) in the middle of the day?, 4) in the afternoon, 5) in the early evening, 6) when you go to bed?. Patients check the button for each question in order to get an estimate of their percentage of “on” and “off” time for that day. A feature that didn’t appear for AD drugs and fit
the functional categories proposed by the CDP framework is related to price and promotions of the drug. There is a tab named “Support and savings” on the website covering this benefit as well as images on other tabs that can be assessed directly (see Figure 43).

4.1.2.5 Gocovri (Amantadine)⁷

This is the latest FDA-approved drug for Parkinson’s treatment and is composed of extended-release capsules to be taken daily at bedtime to guarantee “that drug levels are highest during the day, when dyskinesia typically is most prevalent” (The Michael J. Fox Foundation for Parkinson’s Research, 2017). Apart from presenting similar features as Xadago in what it aims at decreasing “off” time when base medication (levodopa/carbidopa) alone can no longer optimally control the symptoms, Gocovri also act on decreasing the severity and duration of uncontrolled movements (dyskinesia).

The main theme rubric of the CDP method can be analyzed under the lens of unique characteristics of Gocovri in what patients taking it in clinical studies “saw a reduction in their dyskinesia; each day, gained an additional 3.6 hours of “on” time without troublesome dyskinesia; experienced about one hour less “off” time”. There is also a table (Figure 44) explaining the differences between tremors and dyskinesia, stating that Gocovri is not approved for tremors, even if written in small fonts and under the table information.

The scientific feature of the drug that substantiates these clinical benefits are categorized under the reason to believe umbrella of the framework and consists of explaining primary and secondary endpoints with the intake of Gocovri (also exposed in Figure 47 of the appendix): 1) “statistically significant and clinically relevant reductions in dyskinesia based on the change in total score of the Unified Dyskinesia Rating Scales (UDysRS) between baseline and Week 12” and “patients experienced more hours of “on” time without troublesome dyskinesia (results from PD home diaries). However, this information is only stated on the healthcare professional version of the website. For patients and care partners this message is delivered through the main theme, stating the unique features of Gocovri.

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As for the problem statement rubric, two different approaches were developed. The first one on a page directed to Healthcare Professionals, stating that “until now, physicians have had limited options to manage dyskinesia and no approved medicines to treat it – often resulting in a trade-off between OFF time and dyskinesia. (...) Now, with the approval of GOCOVRI, there is an effective tool to help address this longstanding unmet need”. However, this is stated differently on the page directed to patients and care partners, where it says that Gocovri is “the first and only FDA-approved prescription medicine for dyskinesia (sudden uncontrolled movements) in people with Parkinson’s disease (PD) who are treated with levodopa therapy or levodopa therapy with other medicines that increase the effects of dopamine in the brain”. Even though both information could have been exposed on both website pages, the intent was to specify the content depending on the audience. Therefore, for patients and caregivers, information is changed from “physicians have had limited options to manage dyskinesia” to “the first and only FDA-approved prescription medicine for dyskinesia”, for instance.

Apart from the information regarding the drug advantages over other formulations, already covered on the previous rubrics, functional benefits cover the dosage of Gocovri (Figure 46), intake, forgotten dose and side effects for the patient and care partner version of the website. For the healthcare professional page, information regarding clinical studies and trials are explored, mixed in both visual aid (Figure 45) and written format, as shown in the following excerpt “Gocovri was assessed in two randomized, double-blind, placebo-controlled efficacy trials: Study 1 and Study 2. In both studies, patients were required to be experiencing at least 1 hour of troublesome dyskinesia time during the day and at least mild functional impact because of dyskinesia”.

Finally, emotional benefits are less prominent in both versions. The discourse target is the main differentiating feature since on the patient or care partner page, sentences are constructed with expressions such as “your doctor”, “not sure if you have dyskinesia? Talk to your doctor” whereas on the healthcare version they are focused on the other end of the relationship, that is, the person prescribing the drug, as shown on “Ready to start prescribing Gocovri?” and “help your patients access Gocovri”. Colors also play a role in the section since both pages have distinct color designs (Figures 18 and 19).
4.1.3 Amyotrophic lateral sclerosis (ALS) or Lou Gehrig's disease

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig’s or motor neuron (MND) disorder, is a rare progressive neurodegenerative disease that strikes the nerve cells that control voluntary muscle movement, such as walking, talking, breathing, chewing (Global Data Healthcare, 2017). Most people affected by ALS die from respiratory failure and the median survival is of 2-4 years from the appearance of early symptoms. Damaged neurons are unable to
transmit messages from neurons in the brain to activate specific muscles so that they lose strength over time, leading to paralysis (National Institute of Neurological Disorders and Stroke, 2017). It is estimated that there will be an increase of 69% of ALS cases globally from slightly over 220 thousand people in 2015 to almost 400 thousand in 2040 (Arthur et al., 2016).

The main factor influencing this increase according to the authors is the increasing ageing pattern, namely in developing nations. A study estimating the growth of PD’s patients showed a twofold increase, shifting from developed to developing countries and on the article of Arthur et al. they focused on how such estimates perform for ALS disorder. Their results also indicated that population above the age of 60 represented 9% worldwide in 2015 and is estimated to reach 16% by 2040. The number of patients affected by ALS has already grown under this context showing that the estimate is realistic. Improvement of healthcare and economic conditions are also associated to this pattern hence the importance of efficient healthcare resource allocation (Arthur et al., 2016).

Even though a cure for ALS hasn’t yet been found, there are treatments to help alleviate the symptoms and prevent complications, providing better life conditions for affected patients. Current there are only two drugs approved by the FDA to treat ALS, shown in table 5. Rilutek (riluzole) “is believed to reduce damage to motor neurons by decreasing levels of glutamate, which transports messages between nerve cells and neurons” (National Institute of Neurological Disorders and Stroke, 2017). Although it might extend survival by a few months, it does not reverse the already damaged motor neurons. Radicava (edaravone), on its turn, act on slowing the decline of physical function on the ALS patient. Other drugs can be used simultaneously for the alleviation of symptoms such as fatigue and muscle cramps but they are not specific for ALS. From these two drugs FDA-approved exclusively for the treatment of ALS, only the newest one (highlighted on table 5), approved in May 2017, has an established positioning strategy that will be analyzed below under the CDP perspective.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Active Ingredient</th>
<th>Brand Name</th>
<th>Laboratory</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease glutamate levels</td>
<td>Riluzole</td>
<td>Rilutek</td>
<td>Rhone Poulenc Rorer</td>
<td>1995</td>
</tr>
<tr>
<td>Slow decline in loss of physical</td>
<td>Edaravone</td>
<td>Radicava</td>
<td>Mitsubishi Tanabe Pharma America</td>
<td>2017</td>
</tr>
</tbody>
</table>
4.1.3.1 **Radicava (Edaravone)**

Radicava is the second drug approved for ALS treatment after Riluzole approved 22 years ago. It is thought to function as a free radical and prevent oxidative stress damage to nerve cells and is taken for neurological recovery (Global Data Healthcare, 2017). The dosage is an intravenous infusion applied daily by a health care professional for 14 days with a 14-day pause and then 10 days with another 14-day pause (FDA, 2017), as visually explained on Figure 52 (see appendix) extracted from the website. According to the manufacturing laboratory, its cost is estimated to be $145,524 a year and it might extend survival by 2-3 months.

Applying CDP framework to Radicava’s brand strategy, the **main theme** is exposed with the unique and aspirational advantages offered by the drug, which is being “the first FDA-approved treatment option for ALS in more than 20 years”. Furthermore, it says that “in clinical trials, Radicava was shown to slow decline in the loss of physical function as measured by the ALS Functional Rating Scale-Revised (ALSFRS-R)”, which is a tool used to assess the drug’s effectiveness on patients. It measures the loss of functional ability through a 12-item scale (speech, salivation, swallowing, handwriting, cutting food, dressing and hygiene, turning in bed, walking, climbing stairs, dyspnea – short breath, orthopnea – breathing when lying down, and respiratory insufficiency) and Figure 20 extracted from the website explains visually how this rating system works.

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This unique feature offered by the tool is also covered by the **reason to believe** session since it refers to specific mechanism of the product that substantiates the main claim. It also affirms that it is not “intended to be a substitute for professional medical advice, diagnosis, or treatment” but that it helps assessing the progression of ALS in a general way. This transparency helps build trust and assurance on the brand that is being constructed. Another attempt to build this connection is with information regarding safety, side effects, and clinical trial information.

The fact of showing the decline in loss of physical function is the key specific unmet need discussed in the **problem statement** rubric of the CDP model since it shows a substantial enhancement compared to the other existent drug for ALS. There is room for improvement regarding differentiation in this marketplace considering there are only two drugs acting in it.

**Functional benefits** cover not only specific content about Radicava mechanism of action but also information about the infusion, for instance how long it takes, where it can be applied (at a doctor’s office, at an infusion center, at home, or at a hospital), medical conditions that must be checked before the treatment with Radicava (asthma, medicine allegories), and how to prepare for the infusion. All these content is combined with visual aid as can be seen on figures 51-53.
Apart from that, support is offered on a specific tab to provide education and assistance for patients using Radicava “and those who care for them”.

Finally, emotional benefits are tackled in a smoother manner compared to previous strategies. In terms of visual communication, it only displays two pictures (Figures 21 and 22) referring to family and security, each one representing one section of the website. This slight insertion of figures might indicate a weaker emphasis on emotional connection with the consumer. In addition, wording did not depict a specific target segment as it did for instance with AD drugs. The closer to it was “assistance for patients and those who care for them”, compared to the repetitive “your loved one” of AD drugs. The message of Radicava’s website was overall closer to the one of a prescription leaflet with the aid of a few visual material.

5. Discussion

After analyzing each drug separately, a comparison was conducted to outline characteristics and potential dynamics of the age-related drug industry. First of all, after contrasting key information of all drugs gathered on table 2 and organizing them by approval date, it was shown that all recent approved drugs (from 2014 to 2017) have a defined brand positioning approach with a clear communication strategy (through websites addressed to both patients and healthcare professionals). From this sample, all drugs have a version of the website for patients and another one the healthcare professionals. For AD and ALS the differences are not prominent but the PD’s version key information were delivered differently regarding these versions. This distinct approach reflected the positioning proposed by CDP model in what the construction of the message is dependent on the receptor, that is, either patients (or emotionally involved caregivers for AD) or healthcare professionals.
Considering characteristics of each disease-group, even though samples for AD drugs were small, the ones elected for the study relied more heavily on emotional benefits, with the aid of images and discourse using for instance “your loved one” constantly to back it up. Parkinson offered a larger sample with 5 drugs to be analyzed and they presented similar characteristics in what the emotional load was well designed with pictures, names and videos with firsthand experiences from patients using the drug under discussion. Even healthcare professionals’ version of PD’s drugs presented a more developed website although shifting the main focus to functional benefits, as expected from the CDP framework, but it still offered thorough material to narrow the relationship between the brand and the professional. It can be inferred that PD drugs operated on a more aggressive approach, with price and promotions feature, imperative speech (e.g. “go xadago”), capital letters, larger fronts and in this sense, drawing near to traditional marketing initiatives.

Possible reasons for this more established positioning initiative of PD drugs might be (1) the variety of medication for the disease and/or (2) patents that might be getting closer to expiration hence the need for differentiation. New dynamics of the pharmaceutical industry also play a role in this shift since it pushes companies to develop alternative strategies to build and strengthen their brand in order to compete with generics to avoid relying too heavily on organic growth and R&D, which represent high expenses and not necessarily the higher revenues.

Finally, ALS drugs approach was smoother than AD’s and PD’s, being more closely correlated to prescribing information leaflets with a few or no visual aid, providing more informative content than serving as an attempt of being a communication or branding resource. Some factors contributed to these characteristics. It might be structured this way because it is still the second drug to be approved for ALS treatment. Moreover, it is a rare disease with only 450k patients worldwide and patent protection might still be ruling the game. Therefore, pharmaceutical companies might be delaying or still in the process enhancing their engagement on marketing initiatives.

To help visualize the results of the analysis, table 7 compiled key information extracted from each drug analyzed under the perspective of the five rubrics of the CDP framework. The extent to which applying such strategies and approaches will impact positively on both the
pharmaceutical company and the brad is still unclear and doesn’t belong to the scope of this study. However, a comparison in market share, margins and profitability before and after communication strategy implementation is of valuable use.

Table 6: CDP applied to drug brands

<table>
<thead>
<tr>
<th>Disease</th>
<th>Brand Name</th>
<th>Problem statements</th>
<th>Functional benefits</th>
<th>Reason to believe</th>
<th>Emotional benefits</th>
<th>Main themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer</td>
<td>Namzaric (Donepezil + Memantine)</td>
<td>“Articulates a specific unmet need in the marketplace that is being met by the brand in question”</td>
<td>“Essential clinical properties of a medication that intrinsically differentiate it from other medications”</td>
<td>“A reference to some scientific or mechanistic aspect of the brand that substantiates its main clinical benefits”</td>
<td>“Emotions that customers may derive from using the brand in question”</td>
<td>“The truly unique and aspirational advantage offered by the product in question”</td>
</tr>
<tr>
<td>Alzheimer</td>
<td>Namenda (Memantine)</td>
<td>It works differently than other medications for AD because can be used alone or in combination with other AChEIs</td>
<td>It can be conjoined to an already existent AChEIs therapy to boost improvement of overall function, cognition and delay the symptoms for a while</td>
<td>“Does your loved one have difficulty swallowing medications? Namenda XR capsules may be opened and the contents sprinkled on applesauce”</td>
<td>Speech: “If your loved one has moderate to severe Alzheimer’s”, “what if my loved one has never taken Namenda?”, “if you are caring for a loved one”. “Current treatment may help you patients”. More pictures carrying emotional load for patients’ version</td>
<td>More practical intake that can be combined with other medication to alleviate symptoms of AD and help patients go through the disease with smoother side effects</td>
</tr>
</tbody>
</table>

Specific information regard the effects of its clinical benefits as following: “If your loved one with moderate AD is taking donepezil 10 mg, NAMZARIC may improve cognition, also known as mental function; improve overall function; slow down the worsening of symptoms for a while”.

“First and only once-a-day treatment that works in two ways in the brain to help fight the symptoms of moderate to severe Alzheimer’s disease”. “Benefits of Namzaric” tab. Aimed at final consumers to gain trust and assurance from the beginning with the advantage of being the first combined drug in this scenario.

No pronoun is used directed to patients and the sentences are focused on those emotionally involved caregivers.
**Parkinson**

**Rytary**

Adding Rytary to your levodopa/carbidopa medicine may increase your dopamine levels – and reduce some of your PD motor symptoms. Tool to assess the percentage of “on” and “off” time according to six questions: How do you feel 1) when you wake up in the morning?, 2) in mid-morning, 3) in the middle of the day?, 4) in the afternoon, 5) when you go to bed?. Patients check the button for each question to get an estimate of their percentage of “on” and “off” time for that day.

**Parkinson**

Healthcare Professionals: “until now, physicians have had limited options to manage dyskinesia and no approved medicines to treat it – often resulting in a trade-off between OFF time and dyskinesia. (…) Now, with the approval of Xadago, there is an effective tool to help address this longstanding unmet need.”

Patients: “the first and only FDA-approved prescription medicine for dyskinesia (sudden uncontrolled movements) in people with Parkinson’s disease (PD) who are treated with levodopa therapy or levodopa therapy with other medicines that increase the effects of dopamine in the brain”

**Parkinson**

Information about dosage, intake, forgotten dose and side effects for both versions. Clinical studies: “Gocovri was assessed in two randomized, double-blind, placebo-controlled efficacy trials: Study 1 and Study 2. In both studies, patients were required to be experiencing at least 1 hour of troublesome dyskinesia time during the day and at least mild functional impact because of dyskinesia”

**Parkinson**

Primary and secondary endpoints with the intake of Gocovri: 1) “statistically significant and clinically relevant reductions in dyskinesia based on the change in total score of the Unified Dyskinesia Rating Scales (UDysRS) between baseline and Week 12” and “patients experienced more hours of “on” time without troublesome dyskinesia (only on healthcare professionals page)”

**Parkinson**

Reduction in their dyskinesia; each day, gained an additional 3.6 hours of “on” time without troublesome dyskinesia; experienced about one hour less “off” time.

**Parkinson**

Information regarding the effectiveness of the drug states the substantial properties of the drug that differentiates it from other carbidopa + levodopa medications. Detailed information is only found on the healthcare professionals version. On the patients’ page a simpler explanation is given regarding the benefits of the drug.

Details ascertaining the drug’s efficacy along with videos from patients reporting their experiences, combining the scientific evidence with empirical material.

Right at the first page of the website: “real people” and “real stories”. Personalized and more intimate. “Watch now” hyperlink with videos from each of these people’s experiences. Speech addressed to the patient: “ask your doctor”, “goals to aim for when you live with PA”. Healthcare professionals: different layout on the front page and addresses to its audience (“get your patients started on Rytary”, “connect your patients to a world of support”). Images not linked to people.

It is a daily tablet to be taken orally and its truly unique advantage is the increase on the total daily amount of “on” time, that is, when the drug is able to control the symptoms without an increase in their current levodopa dosage.
### Parkinson

**Duopa (Carbidopa + Levodopa)**

- **Enteral suspension method** is the key differentiation factor.
- This administration aims to avoid irregular dosages of the drug since the stomach might function irregularly and slowly for PD patients, that must surgically implant a tube into the intestine to attach an external device that will pump Duopa into it.

- “Duopa delivery system”, comprising “same active ingredients as oral carbidopa/levodopa continuously delivered as enteral suspension for 16 hours”.

- “Unique delivery system designed to administer Duopa at a constant rate reflects the mechanism that substantiates its main clinical benefits. Different strategy applies on the patients’ version of the website, simpler statement and details about the procedure are given afterwards, whereas for healthcare professionals this is the key content of the message straight away.

- Attempt to create a connection with patients, a more personalized approach with pictures of people, a session covering “real people, real story”, whereas the healthcare professional aim is to collect information to understand which option to prescribe to patients, with a more explanatory speech and in less visual tabs. Speech: “your body’s movement”, “your stomach” on the patients’ version and “your patients” on the healthcare professionals’ version.

**Radicava (Raclopride Citarovar)**

- Patients page: “apomorphine hydrochloride injection, is a prescription-only medication that is used as needed to treat the symptoms of off episodes associated with advancing Parkinson’s disease (PD).” Healthcare professionals page: “only FDA-approved therapy in the United States for the acute intermittent treatment of hypomobility—off episodes. It has been studied as an adjunct to other PD medications.

- “Apokyn can provide a rapid and reliable return to an on state for Parkinson’s disease (PD) patients suffering from off episodes. APOKYN reverses off episodes in as early as 10 minutes and enables your patients to resume their daily activities”. “Rapid and reliable return an “on” state; help manage your PD symptoms by quickly ending “off” episodes; be used reliability first thing in the morning; help you walk, talk, and move around more easily; be used to when you need it, up to 5 times a day”.

- Strongly represented on the healthcare professional website with the aid of graphs explaining the action of levodopa on PD symptoms and the effect of Apokyn on this pattern. It also presents results of recent Apokyn clinical trial and a case studies tab.

- Images and a “real patient stories” tab. Patients are addressed with “you are moving”, “your PD symptoms” whereas the other version presents sentences such as “when a patient is experiencing “off” episode”, “identifying Apokyn candidates”. Patients version uses the verb “can” whereas the other uses “may”: either a formality distinction or a slightly different approach on the probability of Apokyn’s effects; more confidence and higher possibility with “can” to reassure patients whilst “may” infers a more realistic picture to healthcare professionals.

- It “can help you start your morning and your day” for patients and it “may enable a person with PD to walk, talk, or move around more easily, returning to an “on” state as early as 10 to 20 minutes”. A distinct approach is acknowledged on the essence of each message, the first focusing the on the patient experience (start your morning and your day) and the other on the physical aspect of the situation (walk, talk, move around).

### ALS

**Radicava (Edaravone)**

- Decline in loss of physical function shows a substantial enhancement compared to the other existing drug for ALS.

- Specific content about Radicava mechanism of action but also information about the infusion, for instance how long it takes, where it can be applied (at a doctor’s office, at an infusion center, at home, or at a hospital), medical conditions that must be checked before the treatment.

- Radicava was shown to slow decline in the loss of physical function as measured by the ALS Functional Rating Scale-Revised (ALSFRS-R)”, which is a tool used to assess the drug’s effectiveness on patients.

- In terms of visual communication, it only displays two pictures referring to family and security, each one representing one section of the website. Wording did not depict a specific target segment: “assistance for patients and those who care for them”, The message: overall closer to the one of a prescription leaflet with the aid of a few visual material.

- The first FDA-approved treatment option for ALS in more than 20 years.

### 6. Conclusion

Market dynamics are different within industries and dependent upon a wide range of factors, for instance governmental influence and regulation, product life cycle, competitive landscape. These
elements are constantly evolving but what remains similar is the need for companies to adapt to new dynamics and be responsive to adjust strategies. The pharmaceutical industry reflects this scenario since it is highly regulated, relies heavily on patent protection and is vulnerable to generic drug development.

The study focused on this market context and explored companies’ strategy in developing an approach to integrate market dynamics with long-term success through brand positioning measures. The literature tackled in the research phase was found to be aligned with the data analysis, meaning that most brands still don’t have a clear positioning approach implemented on their core communication strategy. Only 8 out of 27 drugs were selected for this study analysis since 19 presented simply prescribing information as means of communicating their messages, similar to prescribing leaflets. This study didn’t even cover generic brands competition since most components are under patent contracts but a comparison with drugs after patent expiry regarding the effectiveness of brand positioning for generics would be helpful in analyzing what and how aspects of this dynamic changes.

The framework applied for the analysis was aligned to the healthcare professional versions since they focused on functional benefits, such as study and trials design and results, less (or no) images, more detailed information about mechanism of action and dosage. The speech construct also addressed this audience with expressions directed to patients: “how to help your patient”. The patients’ version, on the other hand, carried more emotional benefits features, such as videos with personal statements, expressions such as “your loved one” repeated constantly for PD drugs, and pictures representing patients and or emotionally involved caregivers.

Additional elements could be implemented in the model to enhance the analysis and provide more specific input. For instance, colors played a role in communicating the message. Gocovri even has different color design for each version. The speech and messages addressed to patients or professionals were distinct so written material and semantic analysis should be included in the framework as features of a new rubric focused on discourse analysis. This categorization would allow a twofold analysis, covering the healthcare professionals’ audience, which is already the aim of CDP model, but it would also deploy elements of the patients’ version in a broader way for a better comparison. The better fit of the rubrics for healthcare professionals’ communication strategy at the expense of the other version would be avoided if the patients’ version were
approached with a different information focus and other elements were evaluated according to the new suggested features. Furthermore, weight should be applied to each rubric in order to analyze which aspects are more relevant to each version and by how much, being adjusted in a spider map to facilitate the display and to providing a more complex data categorization.

Apart from that, a limitation that could be further investigated would be an evaluation of rather these brands that have a brand positioning strategy are more profitable, have more market share or larger margins compared to the ones that do not offer such an approach. Moreover, differences in new drug positioning and drug repositioning could be tested to assess if drugs approved for one disease but applicable to treat other symptoms position similarly or in an integrated manner. This could be balanced with new trials expense and patent protection to gauge benefits and disadvantages of each approach.

Finally, this research covered only age-related neurodegenerative diseases and disregarded cardiovascular diseases, such as diabetes, high blood pressure and cholesterol, which are also common age-related disorder. Musculoskeletal conditions such as osteoporosis have not been covered either but deserve a deeper insight. Depression for instance might be a concurrent symptom of these other conditions and is more likely to display cognitive changes and somatic symptoms when compared to younger adults (Fiske et al., 2009).

7. Bibliography


Handoo, Shweta; Arora, Vandana; Khera, Deepak; Nandi, Prafulla Kumar; Sahu, Susanta Kumar. (2012). A comprehensive study on regulatory requirements for development and filing of generic drugs globally. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3555014/


8. Appendices

8.2 Frameworks

Appendix 1

Figure 1: Approaches to positioning (Urde et al., 2011)

Figure 23: Urde & Koch (2014)
Appendix 2

Picture of sender

Physique | Personality
---|---
Relationship | Culture
Reflection | Self Image

Picture of Recipient

Figure 24: Kapferer (2008)

Appendix 3

BRAND IDENTITY SYSTEM

BRAND IDENTITY

Extended

Core

Brand essence

Brand as Product
1. Product scope
2. Product attributes
3. Quality/value
4. Uses
5. Users
6. Country of origin

Brand as Organization
7. Organization attributes (e.g., innovation, consumer concern, trustworthiness)
8. Local vs. Global

Brand as Person
9. Personality (e.g., genuine, energetic, rugged)
10. Brand-customer relationships (e.g., friends, adviser)

Brand as Symbol
11. Visual imagery and metaphors
12. Brand heritage

Figure 25: Aaker (1996)
Appendix 4

Figure 26: Dogramatzis (2011)
Appendix 5

Figure 1: Framework for commercial strategy based on the new positioning paradigm.

Figure 27: Rao (2009)
Appendix 6

Figure 28: Leonard & Katsanis (2013)
8.2 Alzheimer

8.2.1 Appendix 7: Namzaric

PATHWAY 1
Acetylcholinesterase
(ace•tyl•cho•lin•es•ter•ase) inhibitors
(AChEIs), such as donepezil HCl, are thought to work by slowing the breakdown of a chemical in the brain called acetylcholine. This chemical is involved in learning and memory.

PATHWAY 2
Glutamate
(glut•a•mate) receptor blockers, such as memantine HCl, may help regulate the abnormal activity of glutamate—another chemical in the brain that is important for learning and memory.

Figure 29: Namzaric
8.3 Parkinson

8.3.1 Appendix 8: Rytary

Figure 30: Rytary
Figure 31: Rytary

Figure 32: Rytary

Mean change from baseline in sum of UPDRS Parts II and III scores at Week 30 or early termination.

- In clinical trials, patients did not take additional carbidopa-levodopa products.

Less “off” time and a 2X increase in “on” time without troublesome dyskinesia.
Figure 33: Rytary

Figure 34: Rytary

Get your RYTARY Co-Pay Savings Card here and pay no more than $25*

*Up to $100 maximum benefit. Subject to eligibility. Individual out-of-pocket costs may vary. See terms, conditions, and eligibility criteria.

Figure 35: Rytary
8.3.2 Appendix 9: Duopa

Figure 36: Duopa
Figure 37: Duopa
Figure 38: Duopa

Figure 39: Duopa
8.3.3 Appendix 10: Apokyn

Figure 40: Apokyn
Time to On was more than 2x the duration of wearing off.

Mean time to on for a single dose: 46 ± 21 minutes.
Mean end of dose wearing-off of a single dose: 21 ± 14 minutes.

Time to On: the latency from taking a levodopa dose until the patient turns on. Wearing-off: the time from termination of the beneficial effect of the dose until the time when the next dose is taken.
8.3.4 Appendix 11: Xadago

Figure 42: Xadago

Figure 43: Xadago

Figure 44: Xadago
Figure 45: Xadago

Figure 46: Xadago
Figure 47: Xadago

Pay as little as $25* on your next XADAGO prescription
LEARN HOW

Figure 48: Xadago
### TREMORS ARE NOT DYSKINESIA

<table>
<thead>
<tr>
<th>TREMORS*</th>
<th>DYSKINESIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is it?</strong></td>
<td>Tremors consist of shaking or oscillating movement, and usually appear when a person’s muscles are relaxed or at rest (may also be called a &quot;resting tremor&quot;)</td>
</tr>
<tr>
<td><strong>Where will I feel it on my body?</strong></td>
<td>Tremors are often noticed in the hand or foot on one side of the body</td>
</tr>
<tr>
<td><strong>What does it look like?</strong></td>
<td>During a tremor, the affected body part trembles when it is not performing an action</td>
</tr>
</tbody>
</table>

*GOCOVRI is not an approved treatment for tremors

---

*Figure 49: Gocovri*
Figure 50: Gocovri

Figure 51: Gocovri
STUDY 1 AND STUDY 2: STUDY DESIGN

Studies 1 and 2 were of similar design and were multi-center, international studies. The duration of Study 1 (N = 126; mITT) was 25 weeks; the duration of Study 2 (N = 73; mITT) was 15 weeks.

<table>
<thead>
<tr>
<th>PRIMARY ENDPOINT</th>
<th>Change in total score of the Unified Dyskinesia Rating Scale (UDysRS) between baseline and Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY SECONDARY ENDPOINTS</td>
<td>Derived from Parkinson’s disease (PD) home diaries and included changes from baseline to Week 12 in ON time without troublesome dyskinesia and OFF time</td>
</tr>
</tbody>
</table>

STUDY 1 AND STUDY 2: STUDY POPULATION

BASELINE DEMOGRAPHICS AND PD CHARACTERISTICS OF THE MODIFIED INTENT-TO-TREAT (mITT) POPULATION (MEAN)

<table>
<thead>
<tr>
<th>Age, years (range)</th>
<th>65 (54-82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at the time of PD diagnosis, years (range)</td>
<td>55 (29-75)</td>
</tr>
<tr>
<td>Male patients (percentage)</td>
<td>56</td>
</tr>
<tr>
<td>Mean UDysRS total score (range)</td>
<td>40.1 (8-76)</td>
</tr>
<tr>
<td>Duration of ON time without troublesome dyskinesia, hours (range)</td>
<td>8.4 (0-18.3)</td>
</tr>
<tr>
<td>Duration of OFF time, hours (range)</td>
<td>2.8 (0-9.5)</td>
</tr>
</tbody>
</table>

Patients were treated with a stable dose of levodopa throughout the duration of both studies.

BASELINE PD MEDICATIONS

100% of patients were on levodopa
32% of patients were on levodopa monotherapy
54% of patients were treated with concomitant dopamine agonists
44% of patients were treated with concomitant MAO-B inhibitors

MAO-B = monoamine oxidase type B.
8.4 ALS

8.4.1 Appendix 13: Radicava

*Learn more about the ALSFRS-R.*

Figure 53: Radicava

Radicava should be administered under the guidance of an HCP. You may receive Radicava at:

- A doctor’s office
- An infusion center
- A hospital
- Home

Talk to your HCP and your insurance provider to see what options are right for you.

Figure 54: Radicava
Figure 55: Radicava

First cycle
- 14 consecutive days on
- 14 consecutive days off

Subsequent cycles
- 10 out of 14 days on
- 14 consecutive days off

Check in and meet with a nurse or infusion technician who will be giving you your medication.

Your nurse or technician will confirm your name, the medicine name (Radicava®), and your dosage.

Your vital signs will be checked.

An IV line will be inserted in your vein or a port, if you have one.

Two 30 mg IV bags will be infused (60 mg total). It takes about 60 minutes to receive a full dose of Radicava®.

After your infusion, the IV line will be removed.

Figure 56: Radicava